



ANNUAL
DEPARTMENTAL
REPORTS
1961-62

DIRECTOR OF AGRICULTURE
AND FORESTRY



HONG KONG
ANNUAL DEPARTMENTAL REPORT
BY THE
DIRECTOR OF AGRICULTURE AND FORESTRY
FOR THE
FINANCIAL YEAR 1961 - 62

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EXCHANGE RATES

When dollars are quoted in this Report, they are, unless otherwise stated, Hong Kong dollars. The official rate for conversion to pound sterling is HK\$16=£1 (HK\$1=1s. 3d.). The official rate for conversion to U.S. dollars is HK\$5.714=US\$1 (based on £1=US\$2.80).

Note: The weights and measures used in this Report are:

6 dau chung	.	.	.	.	=	1 acre
1 picul	.	.	.	.	=	133 lb.
1 catty	.	.	.	.	=	1.33 lb.
1 tael	.	.	.	.	=	1.33 oz.

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PART I

INTRODUCTION

THE Colony of Hong Kong has an area of $398\frac{1}{4}$ square miles and lies on the south-east coast of China between latitudes $22^{\circ}9'$ and $23^{\circ}37'$ north, and longitudes $113^{\circ}52'$ and 114° east. The winter monsoon blows from the north-east and there is cool dry weather from September to April. From April to September the south-west monsoon prevails and during this part of the year the weather is hot and humid. The mean daily temperature ranges from about 58° in February to over 82°F in July, and the average annual rainfall is about 85 inches, of which an average of only 9 inches falls from November to March and the other 76 inches during the other seven months. From May to September there is a risk of typhoons which may be severe enough to affect crops and livestock.

2. The topography is rugged and, except for the alluvial deposits in the north-west, the soils are generally thin, acid and low in nutrients. Below the thin topsoil there is usually, however, a considerable amount of disintegrated granite and porphyry, and farmers, particularly recent arrivals, by infinite labour and constant application of manure, can, and do bring this into cultivation, although for some years it acts as a physical anchor rather than a food supplier for plants.

3. Of the total of $398\frac{1}{4}$ square miles, only some 50 square miles can be classed as agricultural land. 34,000 acres are farmed by 47,223 full-time agricultural workers and an estimated 72,500 part-time agricultural workers. Rice production is giving way to very intensive vegetable production, 6 to 8 crops a year, where communications and water supplies permit. Intensive pig and poultry production, and in the brackish-water areas the production of pond fish, continue to expand.

4. The changes in farming and the extreme intensity of production, with related difficulties of pest and disease control, add to the need for adequate advisory services, which the department endeavours to provide.

POLICY

5. The agricultural policy of the department continues to be to encourage maximum economic production of crops and livestock, and

to make the best possible use of natural resources with conservation and improvement of soil fertility, and with this to achieve a progressively higher standard of living for the farming community. The principle aim for forestry is the protection of the water catchment areas of the territory and to obtain an economic return from production in those areas. The use of trees for the protection of farm land and crops and the encouragement of private forestry and amenity planting are also important.

SUMMARY PROGRESS REPORT OF PRODUCTION

6. In general, 1961-62 proved a very satisfactory year for farming. Overall production from crops, livestock, pond fish and forestry was valued at \$231,670,000 maintaining the steady upward trend recorded in recent years. The value of the paddy crop showed an increase of some 16%, due to favourable weather conditions and improved cultural techniques. The value of vegetable production continued to rise, also by some 16%, due to increased acreage and improved prices. Fruit production also showed a steady increase as more trees previously planted came into bearing; fruit prices remained relatively stable. The value of sweet potatoes and other field crops remained at about the same level as in the previous year. There was a sharp increase in flower production, due to improved prices and increased acreage. Pond fish production increased by some 67% partly due to increased acreage. The value of livestock production continued its upward trend from the previous year's figure of \$125,254,000 to \$134,228,000.

ACKNOWLEDGEMENTS

7. The department is indebted to a number of visiting experts, particularly to Dr. C. W. CHANG, Dr. N. PARTHASARATHY, Dr. H. N. MUKERJEE and Dr. S. ONG of the F.A.O. Regional Office in Bangkok for their assistance in the conduct of an Extension Training Course, to the Director and Dr. V. P. RAO of the Commonwealth Institute of Biological Control for their visits. The latter was attached to the department from 13th October to 12th December, 1961 and in addition to training staff in various aspects of entomological work and discovering and classifying a number of insect pests and their parasites and predators, made arrangements for the introduction of other predators which are likely to be of use against some of our insect pests.

8. We are also grateful to officers of the Japanese Ministry of Agriculture and Prefectural Governments for their assistance to the Director and two senior officers during their visit to Japan, to the various

Consuls and Trade Commissioners in Hong Kong who have made available technical information and statistics, to Lt. Colonel MACKENZIE and his Royal Engineers for their assistance in terracing new land at Tai Lung for rice experimental work, and to other departments for their continued co-operation. The farming community is again indebted to Messrs. Lawrence and Horace KADOORIE for their continued assistance in materials and livestock for rural development and for establishment and support in cases of disaster and poverty.

9. The continued co-operation, enthusiasm and hard work of the field and office staff of the department is gratefully acknowledged.

PART II

AGRICULTURE AND FORESTRY IN HONG KONG

(A) WEATHER

10. The annual rainfall was 2,231.2 millimetres (87.8 inches) as compared with an average normal rainfall of 2,152.8 millimetres (84.8 inches). Two torrential downpours which occurred on 20th April and 5th August in the Yuen Long to Sha Tau Kok and Yuen Long areas respectively caused short periods of flooding in the lowlands of the New Territories. Three typhoons affected the Colony: '*Alice*' on the 19th May (max. wind speed 89 knots), '*Doris*' on the 2nd July (45 knots), and '*Olga*' on the 9th September (64 knots). The first two caused slight damage to crops and fish ponds, but more damage resulted from typhoon '*Olga*' which blew for a longer period. The mean monthly temperature ranged from 57.4°F in January to 83.7°F in June, and the average for the year was 73.2°F. The lowest temperature recorded was 42.8°F on January 2nd. Minimum temperatures in the New Territories, however, were lower and 32.5° and 33.2° were recorded at Tai Mo Shan (approximately 2,000 ft.) and Ta Kwu Ling Experimental Stations respectively. The mean relative humidity exceeded 80% from April to September. January was the least humid month with 56% relative humidity. The monthly average sunshine hours ranged from 100.5 hours in April to 279.1 hours in October, with an annual total of 2,212.1 hours as against the average normal hours of 1,951.7. Detailed meteorological data for the year provided by the Royal Observatory are given in Appendix 1.

(B) LAND UTILIZATION AND ECONOMIC TRENDS

11. The figures obtained from the comprehensive survey completed in 1955, were further reviewed. Of the total land area of 398½ square miles, 13.2% or 33,900 acres is classified as agricultural land; 81.3% is non-agricultural (varying from precipitous and rocky to moderate slopes some of which can be utilized), and the remaining 5.5% is urban areas. Pressure comes on the land from two directions: the continued and steady demand for land for urbanization and industrialization, and the need to meet the growing needs of the rural community. The expansion of urban areas tends to encroach more directly upon arable rather than upon marginal land. Although the loss of acreage in agricultural land is considerable, the total area developed from the marginal land in recent years has offset the reduction to some extent.

12. Within farming land, there are two major trends; a continued decrease in area used for paddy cultivation and a steady expansion in area for market garden crops. There is also an increase in pond fish area and a slight expansion in acreage under field crops and fruit. The detailed land use figures are given in Part III (b) and also in Appendices 2 and 3.

13. Afforestation not only to safeguard water catchments, but also for farm and crop protection from wind damage continues to progress. Damage by fire continues to be a major problem.

14. Agricultural production continued its steady increase, both in quantity and value; and prices remained reasonably steady throughout the year. Rice farming continued to concede ground to market gardening and the more intensive forms of field cropping. Some 120,562 metric tons of locally produced vegetables were estimated in the year under review. It was also a good year for paddy and production generally was much higher which tended to compensate for the reduced acreage planted. Fruit continued to command a good and relatively stable price.

15. Pond-fish farming continued to expand, particularly in the marginal land-use areas of the marshes round Deep Bay, previously under sea grass or 1-crop brackish-water paddy. Production showed an increase of some 67% over the figures for 1960-61.

16. The pig-raising industry continued to expand throughout the year, largely due to good market returns. Unfortunately market prices dropped in February and March 1962. Approximately 29% of pigs slaughtered and marketed in the Colony were home bred and fattened. The expansion of the poultry industry has been maintained.

17. *The Farm Population.* From the population census conducted in March, 1961, statistics concerning farm population and farm systems were made available to the department on completion of the tabulation in March 1962. These indicate that:

- (a) There was a total of 28,610 families consisting of 47,223 full-time agricultural workers (30,092 males and 17,131 females). The number of part-time agricultural workers is estimated at some 72,500.
- (b) Under 1% of the full-time farm-workers were under 14 in age and 2.6% were between 14-17. Up to and including 19, there were more girls than boys; then males began to predominate. The age group from 30 to 44 accounted for 40.61% of all farmers and farm workers.
- (c) 79.88% of the male farmers could read but 80.13% of the females were illiterate.
- (d) The average size of farm families was 4.28. Rice growers had slightly larger families than other types of farmers, averaging 4.65 persons.
- (e) 49.69% of the 26,088 master farmers (those who owned or rented some land), farmed their own or ancestral land; 4.88% partly owned their farms, 19.64% held land on long lease (15 years or more) and 25.79% held land on short lease (less than 15 years).
- (f) Out of a total of 28,610 heads of households engaged in agriculture, 2,477 worked as employees, 45 were unemployed, 2,309 were employers of labour and 23,779 farmed on their own account but did not employ labour.
- (g) Among 47,223 full-time agricultural workers 30.23% were principally engaged in rice growing, 34.78% in vegetable farming, 1.86% in flower growing, 0.79% in fruit production, 1.4% in keeping cattle, 13.31% in keeping pigs, 11.66% in keeping poultry, and 5.97% in other agricultural work.
- (h) Rice growing was of secondary interest to 6.47% of the 26,088 master farmers, vegetable farming to 27.40%, flower growing to 1.58%, fruit production to 1.24%, cattle keeping to 0.53%, pig keeping to 38.14%, poultry keeping to 18.62%, and other agricultural work to 6.02%.
- (i) Out of 47,233 farmers, 44.3% were Hong Kong born, 35.55% were from Canton and Macau, 6.69% from Chiu Chau, 11.09% from elsewhere in Kwangtung Province, 1.85% from elsewhere in

China and 0.52% from other countries. The indigenous farmers were mainly rice growers while the immigrants were mainly vegetable growers or poultry and pig keepers.

(C) CROPS

18. *Paddy*. Despite a reduction in acreage, production of paddy was greater than in the last year. This was due to a good season, and to increasing use of pure seed, and to catch cropping in winter with vegetables which are heavily fertilized. The first crop production increased by 9% compared with 1960-61. Yields of the second crop were slightly lower than that of previous year due to localized adverse weather effects on the establishment and early growth of the crop. The total harvest for both crops was estimated at 494,103 piculs (29,891 metric tons) which on a milling percentage of 68% is equivalent to 20,326 metric tons of clean rice. The value of the crop was estimated to be \$19,015,000; which is approximately \$2,623,000 higher than the previous year.

19. Rice stem borer was not conspicuous in either first or second crops. Rice leaf roller skipper and leaf roller moth were active in August and September in small areas in Sai Kung and Lantau. Blast was not serious in main crops for which resistant varieties are available, but caused damage in brackish-water varieties.

20. Paddy production and monetary value over the past five years is recorded below; production by district is given in Appendix 7.

TABLE 1
PADDY PRODUCTION—5-YEAR RECORDS

Year						Production (piculs)	Estimated Value (\$)
1957	...	...	...	...	...	493,650	18,238,500
1958	...	...	...	...	...	545,628	22,271,000
1959	...	...	...	...	...	519,738	18,548,000
1960	...	...	...	...	...	453,270	16,392,120
1961	...	...	...	...	...	494,103	19,015,000

Note: Value calculated on ruling price of two crops fresh water paddy, one crop brackish-water paddy and one crop upland rice.

21. *Vegetables*. Weather conditions were unfavourable for vegetable production during the summer months. Torrential rain in April caused serious flooding in the main vegetable growing areas and resulted in some loss of crops. Typhoons 'Alice' in May, 'Doris' in July and 'Olga' in September caused further damage, especially to vegetables grown on

trellises and ground-running melons and cucumbers. In the latter half of the year, weather favoured the growth of crops. Annual production increased to a total estimated value of \$52,514,000, an increase of \$9,033,000 as compared with the previous year. Comparative details of vegetable production and value are given in Appendices 8 and 9.

22. Fall army worm (*Prodenia spp.*) and cabbage flea beetle caused damage to many crops throughout the year; fall army worm was worse between May and September while flea beetle was most destructive in autumn and winter. Aphides were common especially in warm weather in winter time. Chive Rust (*Uredospore puccinia*) and Angular Leaf Spot of cucurbits are both troublesome and not controlled by fungicides. Powdery mildew occurred on peas, from December to March, but was not particularly serious.

23. *Field Crops.* Common field crops grown in the Colony, such as sweet potato, sugar cane, soyabean, peanut and millet, covered an area of 4,547 acres. In addition, 3,360 acres of 2-crop paddy land were planted to sweet potato in the fallow season between 2nd crop and 1st crop of the following year. The harvests of these crops were satisfactory in general and no serious insect pests occurred. Annual production was estimated to be \$12,349,800, about the same as last year.

24. *Fruit.* The lychee crop was excellent and longan, guava, Chinese olive, tangerine and local lemon were normal, in spite of typhoons. Typhoon 'Alice' in May damaged the immature fruit of wampeï and reduced the yield. Japanese apricots gave a higher and peaches a lower yield than in the previous year.

25. About thirty different species and cultivars of fruit are grown in the territory; and the annual production is now valued at approximately \$3,320,250. Fruit prices were stable and slightly higher than last year. Details are summarized in Appendix 11.

26. The Lychee stink bug (*Tessaratoma papillosa*) caused less trouble than in the previous year. Citrus Leaf Miner (*Phyllocnistis citrella*) caused much damage in the hot weather, and Orange Dog (*Papilio polytes*) attacked citrus throughout the year. Attacks of citrus scab and canker were widespread in the rainy season.

27. *Flowers.* There was little change in the acreage under flower crops.

28. The main area continued to be around Sha Tin, with smaller areas at Tai Po and Fanling; flowers were also grown in small suburban

nurseries in Hong Kong and Kowloon. The more important flower crops were gladiolus, carnation, ginger lily, chrysanthemum, aster, roses of exotic varieties and African daisy. Though the summer weather was often adverse, the damage to flowers was not great and crops thrived in the latter half of the year. Greater demand created better prices compared with the previous year, and this resulted in an increased acreage and greater production.

29. There was the usual high demand both for potted plants and cut flowers at Chinese New Year, when the greater portion of blossom peach and narcissus was in flower and thus able to command high prices.

(D) POND FISH

30. General conditions for pond fish production were very good. The Royal Observatory figures for rainfall and evaporation for the year were 223.2 mm. and 1,644.8 mm. (87.83 inches and 64.75 inches) respectively, which are close to the average. Hence rain-fed ponds could be maintained, provided they were of adequate depth. Some losses occurred through flooding and escape of fish following typhoon 'Olga', but they were on the whole negligible.

31. Although there are small numbers of fresh water ponds throughout the New Territories, the bulk of pond fish produced continued to be from the salt marsh area between Yuen Long and Lok Ma Chau. There was great activity in this area during the dry winter weather and fifty-five new ponds totalling 1,178 dau chung (196 acres) were constructed. The total number of fish ponds is now 234, covering 5,931 dau chung (988½ acres).

32. The most important fish in brackish-water ponds is Grey Mullet. Common Carp and four kinds of Chinese Carp are used in fresh water ponds and also, in smaller numbers, in brackish water where the salinity does not exceed five parts per thousand.

33. Grey Mullet (*Mugil cephalus* L.) spawns in coastal waters, in the spring. This year fry was first found on January 17, at Sha Tau Kok Hoi (Starling Inlet). The supply was good, and by the end of March it was estimated that 11 million fry had been caught and stocked in local ponds. As supplies increased, the price dropped from an initial 10¢ to 2¢ a fish.

34. As supplies were plentiful and cheap, the practice of heavy stocking with fry continued; rates of up to 10,000 per acre are usual,

and allow for early mortality of over 50%. Production is spread out by thinning out the young fish in the autumn (at about $\frac{1}{2}$ lb.) and leaving say 600 to be harvested at between 1 and 2 lb. in the early spring. (Prices were as usual particularly good around Chinese New Year, February 5 and 6).

35. There was an adequate supply of fry of the four species of Chinese Carp from China. A total of 21 million was imported (15 million being imported by the two main dealers). Re-exports to Taiwan, Singapore, Bangkok and Saigon amounted to $9\frac{1}{2}$ million fry. Import and re-export figures for the previous year were $24\frac{1}{2}$ and $15\frac{1}{2}$ million respectively. Thus the fry used locally amounted to $11\frac{1}{2}$ million this year and 9 million last year. This $11\frac{1}{2}$ million is made as follows:

Big Head (<i>Aristichthis nobilis</i> Richardson)	784,900
Silver Carp (<i>Hypophthalmichthys molitrix</i> C & V)	3,940,100
Grass Carp (<i>Ctenopharyngodon idellus</i> C & V)	5,374,500
Mud Carp (<i>Cirrhina molitorella</i> C & V)	1,395,000
	11,494,500

36. Common Carp (*Cyprinus carpio* L.) is the only species which can be bred locally. Nine breeders produced about 1 million fry which sold at between 2¢ and $2\frac{1}{2}$ ¢ a fish.

37. The production of pond fish in the New Territories was estimated to be 18,500 piculs (1,100 tons), an increase of 54% on last year's total of 12,000 piculs (714 tons). Prices (which are given in Appendix 16) were slightly higher than last year and the value was estimated at \$5,000,000 as opposed to \$3,000,000 in 1960-61. The average production per acre increased from 1.1 tons in 1960-61 to 1.3 tons in 1961-62, giving an estimated average gross return of \$5,900 per acre.

38. Imports of pond fish from China (recorded by the Marine Department) decreased from 188,386 piculs in 1960-61 to 164,637 piculs in 1961-62. Thus local production rose from 6% to 10% of the total consumption.

(E) LIVESTOCK

39. *Pigs.* The market price of pigs remained steady throughout the greater part of the year averaging \$212 per picul, 1960-61 \$210, but in February and March the price fell to \$180 - \$185 per picul. There appears to have been a continued trend towards the quality pig and when the market was favourable a premium of the order of \$10 - \$15 per picul was paid for good local cross pigs as it is for the better pigs

from Korea and Taiwan. Census figures show that the pig population has increased by some 110,350 head and that the number of breeders has increased considerably. It is estimated that the breeding stock of the Colony has increased from 20,000 - 33,350 and surveys carried out in conjunction with the Resettlement Department and the Urban Services Department revealed that some 15% of the local pigs are raised in the urban areas of Hong Kong and New Kowloon. There was a continued increase in the number of pigs raised in the Colony and which passed through licensed slaughterhouses. The number this year was 333,904 which represented 29% of the total 1,155,210 slaughtered. (See Appendix 14).

40. Based on average ruling prices, a conservative estimate of the value of pigs raised in the Colony, and slaughtered for urban consumption, was in excess of \$46,000,000. In addition allowance must be made for the value of pigs raised and slaughtered by farmers for home consumption.

41. *Poultry—Chickens.* The poultry industry maintained its expansion. Imports from China continued to decrease, but this decrease was offset by the importation of dressed frozen poultry from U.S.A. and Japan. The market price of poultry decreased slightly during the year to between \$3 and \$3.50 per catty, 1960-61 \$3.50 to \$4. The average poultry population, at any time and of birds up to the age of three and a half months, was estimated to be about 2,800,000. Local poultry farmers were able to raise the usual three batches during the year accounting for a total production of some 8,400,000 birds. At the low average figure of \$6 per bird, annual production was valued at some \$50,400,000 worth of poultry meat.

42. *Eggs.* The Colony is now self-supporting in hatching eggs and prices were maintained at 40¢ to 50¢ each. It is estimated that some 340,000 local type birds are being kept for breeding purposes. Allowing for the low egg production of about seventy eggs per year for this type of bird, approximately 23,800,000 were produced; of those some 60% were sold for hatching at an average price of \$4.80 per dozen. The remaining eggs, largely infertile, were marketed at a price of \$1 per dozen. The total value of production was thus in excess of \$6,505,000. Due to continued importation of table eggs from Japan and Thailand there was little or no increase in the population of White Leghorns, which remained about the 21,000 mark and produced some 3,780,000 eggs. These sold at an average price of \$3 per dozen and fetched an estimated 1,008,000, 1960-61 price \$2.80 per dozen.

43. *Cattle*. A total of 4,450 cattle raised in the Colony were sold for slaughter; this is a decrease of 498 compared with the number of local cattle slaughtered during the previous year. The return from these cattle was valued at approximately \$2,254,000. The importation of cattle for slaughter decreased by 26,213 to total 98,812 head. (See Appendix 14).

44. *Milk*. Locally produced milk passing through the five pasteurization plants totalled 13,618,905 lb.; an increase of approximately 1,023,074 lb. compared with the previous year. At \$1 per pound of milk the value of this production was approximately \$13,618,905.

45. *Poultry—other than chickens—Ducks*. Production, as in previous years, was mainly for local consumption and a decrease in the importation of ducks from China resulted in price increases. Breeding stock was estimated to have increased to 11,000 birds. Some 1,260,000 ducks were marketed locally at prices averaging \$8 per bird, 1960-61 \$9, realizing a value of \$10,080,000. The value of preserved ducks exported to the U.S.A. was \$124,992.

46. Wu Chow and Peking Ducks are raised in the wetter areas of the Colony and Mud Ducks in the drier areas. Pure Peking Ducks are kept by only a few specialized duck farmers for breeding. The Peking is bigger than the other two local breeds but the meat is coarser in texture and the white plumage still tends to be unpopular with local farmers. Peking drakes are, however, in great demand for crossing with the Wu Chow ducks, which produces a very acceptable table bird, heavier than the Wu Chow, but with a finer flesh texture than the Peking. The Wu Chow is a hardy early maturing bird of fine flesh texture and acceptable colour. This extensive crossing is making it increasingly difficult to obtain pure Wu Chow hatching eggs.

47. The local Mud Duck is a sterile cross between a Muscovy drake and a Wu Chow duck. The majority of the Mud Ducks are imported from Taiwan as fertile eggs already incubated for 24 to 25 days and hatched locally.

48. *Duck Eggs*. The price of hatching eggs was \$5 per dozen, 1960-61 \$8, and the price of table eggs was \$1.20 per dozen, the value of both being estimated to be in excess of \$700,000.

49. *Geese*. Breeding stock increased to 7,000 head and production for the local market was estimated at some 110,000 birds, sold at an average price of \$12 each. This, plus 560,000 eggs worth \$1 each, brought the production value to \$1,880,000.

50. *Pigeons*. Pigeon raising continued to expand and breeding stock were estimated to have increased, by 8,000, to some 48,000 pairs of birds. Prices remained steady at an average of \$7 per pair of squabs, and sales were estimated to be some 240,000 pairs at a value of \$1,680,000.

51. *Quail*. The quail population decreased to some 10,500 breeding stock; plus a similar number marketed at \$1 per bird. Production of quail eggs was assessed at 1,584,000 and sold at 60¢ per dozen. The total value of quail farming was estimated at \$90,000.

(F) FORESTRY

52. The plantations were extended by 733 acres, bringing the total plantation area to approximately 14,111 acres. The greater part of this increase was on the better lands within water catchments, and some further limited assistance was given to village forestry. The incidence of fires was approximately twice that of the previous year. Widespread damage to plantations was avoided but preventive measures made heavy demands on manpower. Pine Caterpillar (*Dendrolimus spectabilis*) were very serious in Tai Lam Chung and the surrounding districts especially in June, July and August. (3rd and 4th generations). 500 acres were badly attacked and another 500 acres were affected to a lesser degree.

53. Local yields of forest produce inevitably remained small, the main supplies of all requirements being imported. The pattern of the import and export trade was substantially the same as in the previous year though at a lower level. (See Appendix 18).

PART III

WORK OF THE DEPARTMENT OF AGRICULTURE AND FORESTRY

1. AGRICULTURAL DIVISION

54. Following the establishment of the unified Extension Service on 1st April, 1961, the Agricultural Division comprised the following sections:

- Agronomy (covering rice, field crops, and pastures and fodders)
- Market Gardening (Chinese and temperate vegetables and flowers)
- Fruit (propagation and experimental work)
- Plant Protection (plant pests and diseases)
- Pond Fish (both investigation and specialized extension)

Land Use and Economics (Added on 14th December, 1961)

Chemistry Section (Added on 14th December, 1961)

Crop Compensation, and Certification of origin of crops for export.
(Established as a separate section on 19th February, 1961)

55. Development work of particular importance for future experimental work on paddy and other crops was carried out at Tai Lung, where two large terraces of 2 and 3 acres each, with surrounding access roads, were constructed by the Royal Engineers with heavy earth moving equipment.

56. Investigations were carried out into the use of various types of polythene sheet. A 12 × 20 feet sheet, 5/1000" thick, made an excellent temporary water pool, used as a fish pond at the Agricultural Show. The same thickness in roll form, 4 feet wide, was used for lining earth irrigation channels; although promising at first, the sheets were eventually damaged by flood water due to the difficulty of adequately securing the edges. Tubing of 3/1000" thickness for irrigating vegetables and fruit trees was found to be easily damaged by cattle trampling, by thorns, and by rats and cockroaches.

(A) HUSBANDRY AND RESEARCH

AGRONOMY

Rice

57. *Multiplication of Stock Seed.* Production of stock seed from panicle selections continued at Castle Peak. On an area of 0.72 dau chung, the leading 'blast-resistant' varieties, Fa Yiu Tsai and Lo Shu Ngar yielded respectively 500 catties per dau chung (or 4,000 lb. per acre) during the first-crop season, and 544 catties per dau chung (or 4,352 lb. per acre) in the second-crop season. The two crops yielded a total of 1,044 catties per dau chung, or 8,352 lb. per acre, per annum. 10,000 lb. selected seed of each of these varieties was made available for distribution.

58. *Introduction of Varieties.* On the recommendation of the F.A.O. Regional Rice Officer, samples of six varieties—Panbira and Patnai 23 from East Pakistan, Azucena and Dinalaga from the Philippines, and Nato and Bluebonnet from U.S.A.—were obtained. These varieties were planted at Castle Peak. Patnai 23 and Panbira failed to flower. Dinalaga flowered, but failed to set seed. The other three showed no improvement over the leading indigenous varieties, but will be tested for a further season.

59. *Project No. RI 20: Nitrogen and Spacing Trial.* This experiment was continued into the second year at Castle Peak. The design was split plot with four main (nitrogen) treatments and four sub (spacing) treatments; main plot size 20 ft. $\times$ 20 ft.: subplot size 10 ft. $\times$ 10 ft. Nitrogen treatments were: Control—no nitrogen; 30 lb. nitrogen per acre; 60 lb. nitrogen per acre; and 90 lb. nitrogen per acre. Nitrogen was applied in the form of Ammonium Sulphate. A standard treatment of 30 lb. of P_2O_5 , as Superphosphate, and 15 lb. of K_2O , as Muriate of Potash, was applied to each plot. Spacing treatments were 12" $\times$ 12", 9" $\times$ 9", 6" $\times$ 6" and 9" $\times$ 4½", with uniform plant numbers. Results are summarized as follows:

60. *First Crop Season:*

All nitrogen treatments gave highly significant increases over control. 60 lb. nitrogen per acre gave a significantly higher yield than 30 lb. nitrogen per acre. The difference between 60 lb. nitrogen and 90 lb. nitrogen per acre was not significant. Of the four spacing treatments, 9" $\times$ 4½" gave a highly significant yield increase over 12" $\times$ 12", but was not significantly superior to 6" $\times$ 6" and 9" $\times$ 9". 6" $\times$ 6" gave a highly significant increase over 12" $\times$ 12". The yield difference between 6" $\times$ 6" and 9" $\times$ 9" and interaction between nitrogen and spacing were not significant.

61. *Second Crop Season:*

A highly significant response to 90 lb. nitrogen per acre, and significant responses to 60 lb. nitrogen and 30 lb. nitrogen per acre, were recorded. 90 lb. nitrogen per acre gave a significantly higher yield than 30 lb. nitrogen per acre. The yield differences between 90 lb. nitrogen and 60 lb. nitrogen per acre, and 60 lb. nitrogen and 30 lb. nitrogen per acre were not significant. Of the spacing treatments 6" $\times$ 6" and 9" $\times$ 9" gave significantly higher yields than 12" $\times$ 12". Yield differences between 6" $\times$ 6", 9" $\times$ 9" and 9" $\times$ 4½", and interaction between nitrogen and spacing were not significant.

62. *Project No. RI 21: Brackish-water Paddy Fertilizer Trial.* An experiment was laid down to test fertilizer requirements on brackish-water paddy in Mai Po. The design was 3³ confounded NPK factorial with two replications and plot size was 15 ft. $\times$ 10 ft. Treatments were as follows:

- (i) Nitrogen: Levels of nil (N_0), 30 lb. (N_1) and 60 lb. (N_2) nitrogen per acre in the form of Ammonium Sulphate.

- (ii) Phosphorus: Levels of nil (P_0), 30 lb. (P_1) and 60 lb. (P_2) P_2O_5 per acre in the form of Superphosphate.
- (iii) Potassium: Levels of nil (K_0), 30 lb. (K_1) and 60 lb. (K_2) K_2O per acre in the form of Muriate of Potash.

63. There was a highly significant negative response to nitrogen at 30 lb. (N_1) and 60 lb. (N_2) per acre, while the amount of Blast damage increased with increasing nitrogen. N_2 gave a highly significant decreased yield as compared with N_1 . 30 lb. P_2O_5 per acre gave a significant increased yield over control. Interactions between nitrogen and phosphorus and between phosphorus and potassium were significant.

64. *Project No. RI 22: Observations on Photo Periodic Response of Rice Varieties.* A preliminary observational trial was laid down at Castle Peak in 1960 to study growth and yield of each variety sown at monthly intervals. Fourteen rice varieties were employed, comprising five first-crop varieties, Fa Yiu Tsai, Early Sze Miu, Chan Chu Cho, Kam Bau Ngan and Hon Chim; seven second-crop varieties, Wong Huk Chai Mei, Pak Huk Chai Mei, Kuk Tsai, Lo Shu Ngar, Fall-crop Sze Miu, Ham Moon and Sam Sin Kuk; and two less sensitive varieties, Leung Cho Kuk and Tai Chung No. 1. Each variety was planted to two pots with three seedlings per pot. The results are summarized as follows:

- (i) The first-crop varieties and the second-crop varieties gave the best yields when they were sown in March and in June respectively. The results confirmed that the farmers have chosen the proper times to sow the first and the second rice crops in this territory.
- (ii) Of the fourteen varieties tested, all matured either from June to July or from October to November.
- (iii) The number of days to maturity of each variety varied with the time of sowing.
- (iv) Most of the first-crop varieties were not very sensitive to photo periodic periods. The second-crop varieties were highly sensitive to short day length.

65. *Project No. RI 23: Fertilizer Trials on Typical Rice Soils.* Investigational work on the use of fertilizer with rice has been conducted on the Department's stations since 1950. In order to cover all the major soil types in the territory additional trials on farmers' fields were started in 1958. The summary of results of the trials conducted during the year (Series C) are recorded in table.

TABLE 2

SUMMARY OF STATISTICAL SIGNIFICANCE OF FERTILIZER TRIALS (N_1 , N_2 , P & K) ON TYPICAL RICE SOILS, 1961

	Locality	Treatment Soil Type	Crop	N	P	K	NP	NK	PK
a.	Tin Sam, Sha Tin	Sha Tin	1st	N_2 & $N_1 > > N_0$	-x		xx		
			2nd	N_2 & $N_1 > > N_0$					
b.	Tai Om, Lam Tsuen	Lam Tsuen	1st						
			2nd						
c.	Shun Wan	San Hing	1st						
			2nd	$N_2 > > N_1 > > N_0$	xx	-x		x	
d.	Yim Cho Ha	Sha Tin	1st						
			2nd	$N_2 > > N_1 > > N_0$					
e.	Ho Sheung Heung	Mai Po	1st						
			2nd						
f.	Wang Toi Shan	Sek Kong	1st	$N_2 > N_1 > > N_0$		x			
			2nd	N_2 & $N_1 > > N_0$					
g.	Ha Tsuen	Chek Nai Ping	1st						
			2nd	N_2 & $N_1 > > N_0$					
h.	Chung Uk Tsuen	Chek Nai Ping	1st						
			2nd						
i.	Tai Po Tsai	Castle Peak	1st	$N_2 > > N_1 > > N_0$	xx				
j.	Tung Chung	Sek Kong	1st						
			2nd						

Note: > or x = Significant at 5%

>> or xx = Significant at 1%

FIELD CROPS

Sweet Potatoes

66. *Project No. FC 1/60 a and b.* Trials on selection of sweet potatoes limited to six varieties for root and six for vine production were laid down at Castle Peak after the second-crop rice. The design was a 6×6 Latin square, testing Variety Nos. 7, 33, 153, 161, 172 and 190 for root production (Project No. FC 1/60 *a*), and Variety Nos. 59, 85, 157, 210, 213 and 223 for vine production (Project No. FC 1/60 *b*). The experiments are in progress, and the crop is expected to be harvested before the wet season.

Tea

67. Three simple observational trials on tea commenced in 1960. All of the plants were pruned back to eight inches from the ground during the dry season, in preparation for plucking in 1962. In general, growth was rather slow.

68. *Project No. FC 2: Tea Spacing Trial.* Two seedlings were planted per hill, one foot apart, with hills spaced at 4 feet by 1 foot, $5\frac{1}{2}$ feet by 1 foot; and four seedlings at 4 feet by 4 feet. By the end of the growing season the closer plantings had merged into hedges whereas the wider spacing had not.

69. *Project No. FC 3: Tea Varietal Trial.* Eight varieties (seven local and one from Japan) are under observation.

70. *Project No. FC 4: Tea Trimming Trial.* This is to compare the yield from hedges pruned to table form and to semi-circular form.

Water Chestnut

71. The first work to be carried out here on this wet-land crop began with four trials at Castle Peak. Growth was, however, poor, due to a shortage of water during the growing season and also possibly to a low organic matter content of the rice soils. The layout and results of the trials are summarized as follows:

72. *Project No. FC 5: Collection of Strains of Water Chestnut.* Strains were collected from twenty-three sources in eleven districts. They were multiplied in plots 15 feet square with one plant per hill at a spacing of 3 feet by 3 feet. Marked differences in yield were obtained and trials will continue with the eight most promising strains.

73. *Project No. FC 6: Water Chestnut Spacing Trial.* The design was six randomized blocks with three pots each. Spacing treatments were: $1\frac{1}{2}$ ft. $\times$ $1\frac{1}{2}$ ft., 3 ft. $\times$ 3 ft. and $4\frac{1}{2}$ ft. $\times$ $4\frac{1}{2}$ ft. The plot size was 20 ft. $\times$ 20 ft. Under the unfavourable conditions of the trial, and with a strain which gave a poor performance in the variety trial, close planting at $1\frac{1}{2}$ ft. $\times$ $1\frac{1}{2}$ ft. gave a highly significant increase in yield over 3 ft. $\times$ 3 ft., which gave a highly significant increase over the $4\frac{1}{2}$ ft. $\times$ $4\frac{1}{2}$ ft.

74. *Project No. FC 7: Water Chestnut Time of Planting Trial.* The design was four randomized blocks with six plots each, testing three times of planting on 1st May, 7th June and 15th July, and sprouted corms transplanted at 1 foot or 2 feet in height. The plot size was 15 ft. $\times$ 15 ft. planted with one plant per hill at a spacing 3 ft. $\times$ 3 ft. Yield differences between time of planting were not significant. Of the heights of plant at time of transplanting 1 foot gave a highly significant increase over the 2 feet. The interaction between time of planting and height of plant was not significant.

75. *Project No. FC 8: Water Chestnut N P K Fertilizer Trial.* The design was 3^3 confounded factorial with no replication. Treatments were as follows:

- (i) Nitrogen: Levels of nil, 60 lb. and 120 lb. nitrogen per acre in the form of Ammonium Sulphate.
- (ii) Phosphorus: Levels of nil, 60 lb. and 120 lb. P_2O_5 per acre in the form of Superphosphate.
- (iii) Potassium: Levels of nil, 60 lb. and 120 lb. K_2O per acre in the form of Muriate of Potash.

76. The results indicated a significant linear effect for potash application. The differences in yield between other treatments and their interactions were not significant.

Sorghum

77. Fifty three cultivars of grain sorghum were introduced from Uganda and planted at Ta Kwu Ling. Seed of the twenty-five most promising varieties will be used for further trials.

Fodder Crops

78. *Project No. GL 1: Comparison of Six Fodder Grasses.* A trial was laid down in 1960, at Ta Kwu Ling Dry Land Experimental Station, testing six varieties of grass, Local Guinea (*Panicum maximum*), Sigor Guinea (*P. maximum*), Sweet Sudan (*Sorghum sudanense*), Columbus (*S. alnum*), Elephant (*Pennisetum purpureum*), and Thin Napier (*P. polystachyon*). A 6×6 Latin square layout with a plot size of 20 ft. $\times$ 20 ft. was used. Results to date confirm that Elephant grass gives higher yields in both the dry and the wet seasons than the other grasses. The two Sorghum species gave negligible growth in the dry weather.

Market Garden Crops

79. Work on these crops continues to be centred at Sheung Shui Market Garden Experimental Station, where selections of local Chinese vegetables and trials on fertilizer and cultural methods were conducted. Small stocks of selected strains of cross-fertilized vegetables are maintained by growing in isolation at Tai Mo Shan High Altitude Experimental Station. In order to relieve space at Sheung Shui, crops for seed production were grown on the Silver Mine Bay Livestock Experimental Sub-Station; however, difficulties were experienced on this Station due to shortage of water. An outbreak of Turnip Mosaic was also serious in this area on white cabbage and other Brassica, and several crops

were unfit for seed. Losses through bird damage are often high in winter time on seed crops; but a sample of fine nylon 'wool' which was teased out to cover the maturing seed proved very effective in keeping birds away.

80. *Seed Production.* Selections were made in the following growing crops for uniformity and trueness to type, and seeds were made available for sale to farmers as shown below:

TABLE 3

<i>Kinds of Vegetables</i>						<i>Seeds Harvested 1961-62</i>
Green cucumber	...	...	...	...	...	274 tael
Chinese spinach	...	...	...	...	...	723 "
Sugar pea	...	...	...	...	...	213.5 catties
Chinese kale (late)	...	...	...	...	...	280 tael
Green string bean	...	...	...	...	...	66 catties
White string bean	...	...	...	...	...	96.25 "
Hairy squash	...	...	...	...	...	1,458 tael
White cucumber	...	...	...	...	...	193 "
Bitter cucumber	...	...	...	...	...	123 "
Spinach	...	...	...	...	...	104.5 catties
French bean	...	...	...	...	...	70.5 "
Water spinach	...	...	...	...	...	200 tael
Chinese white cabbage	...	...	...	...	...	528 "
Chinese flowering cabbage	...	...	...	...	...	128 "
Chinese radish	...	...	...	...	...	70 "
Silky squash	...	...	...	...	...	88 "
Egg plant	...	...	...	...	...	199 "
Chinese kale (early)	...	...	...	...	...	280 "
Garland chrysanthemum	...	...	...	...	...	143 "

81. *Observations on Western Vegetables.* Samples of a number of Australian varieties were grown for observation. Seed from this source had not previously been tested.

82. *Lettuce.* Yatesdale gave the best results, being early and uniform with very firm heads and few waste leaves; Great Lake gave a slightly higher yield but was not so uniform and had a greater proportion of outer leaves. Original Great Lake was poorer in quality, and irregular in size with a lower yield. The best yield was at the rate of 22 piculs per dau chung.

83. *Cauliflower.* The four varieties Snowball A, Snowball Y, Phenomenal 12 weeks, and Selection 192 were compared. The two Snowball varieties were satisfactory, giving uniform heads 5 - 6 inches in diameter.

However, whereas Snowball Y gave 100% head formation, Snowball A gave only 85%, Phenomenal 12 weeks only 72%, and Selection 192 did not produce heads at all, being a late variety.

84. *Cabbage*. The four varieties Earlyball, Copenhagen Market, Jersey Wakefield, and Green-gold Hybrid yielded at the rate of 26, 34, 37 and 39 piculs per dau chung in that order of earliness.

85. *Carrots*. The three varieties Progress, Top-weight, and King Chantenay, all gave good crops. Yields were between 16 and 36 piculs per dau chung depending on time of harvest.

Variety Trials

86. *Project No. VG 1: Chinese Kale*. A station selection and a locally-obtained variety of both early and late types were compared. Seed was sown on 21st September and transplanted at four weeks. Harvesting commenced at 7½ weeks and lasted until 16½ weeks for both early varieties; and commenced at 10 weeks and lasted until 20½ weeks for both late varieties. Total yields were at the following rates:

		<i>Catties per dau chung</i>	<i>Pounds per acre</i>	<i>Total value* (\$ per dau chung)</i>
Local-Early		2,450	19,580	840
Station Selected, early		2,340	18,690	810
Local Late		2,890	23,110	730
Station Selected Late		3,610	28,870	860

* Based on average market prices.

87. Although the latter gave the highest yield, unfortunately statistically valid tests of significance could not be applied.

88. *Project No. VG 2: Chinese Radish Variety Trial*. The following four varieties were compared:

Nam Chou Chung, ex Taiwan (twice grown seed selected on station)
 '80 days' ex Taiwan (also twice grown seed selected on station)
 Local variety from Yuen Long Market
 Tou Chou Early, a local variety

89. All varieties were sown on 10th October and harvested eight weeks later. Growth was good. Yield differences were not statistically significant but the Taiwan 80 days variety gave the most uniform root shape. The overall average yield was 21.5 piculs per dau chung (17,170 lb. per acre). The selling price was \$6 per picul, giving a gross return of \$128.80 per dau chung.

90. *Project No. VG 3: Pea Variety Trial, for Shoot Production*. The local white flowered garden pea was compared with a dwarf purple-

flowered variety from Hawaii for production of shoots (which are one of the highest-priced Chinese vegetables). Seed was sown on 10th October and the first plucking made seventeen days later. Sixteen pluckings were made over a period of $11\frac{1}{2}$ weeks. Yields of shoots were at the rate of 620 and 750 catties per dau chung (4,960 and 6,000 lb. per acre), the Hawaii variety giving a significantly higher yield. This variety gave a gross return at the rate of \$1,205 per dau chung. The labour required for plucking was $258\frac{1}{2}$ man-hours per dau chung.

91. *Project No. AG 3: Weed Killers in Carrots.* Hand labour weeding is a major cost in the cultivation of carrots. Two recently developed weed killers, Gesamil and A1114, were claimed by the makers to be particularly suitable for weed control in this crop. They were tested in a factorial layout at 1 lb. and 2 lb. per acre as pre-emergence (four days after sowing) and post emergence (ten days after germination) dressings, with an untreated and unweeded control. No treatment was effective. The control plots yielded at the rate of 1,337 lb. per acre, with 6,365 lb. of weeds. The highest yield was only 1,510 lb. of carrots, with 4,872 lb. of weeds (1 lb. A1114, post emergence). The greatest weed control was associated with lowest yield—3,050 lb. of weeds and 637 lb. of carrots, given by 2 lb. Gesamil as a post emergent application. Other treatments were intermediate in effect.

92. *Project No. AG 2: Cost of Production of White Cabbage.* The market prices of vegetables such as white cabbage show a similar pattern from year to year, reaching a maximum of about \$60 per picul in October and falling as low as \$6 in November and again in February. This trial was designed to investigate the extent to which yield and costs (and hence returns) varied throughout the year. Two methods of cultivation were used—irrigation of dry beds from sump by watering can (A and B); and irrigation from flooded furrows between the beds (C and D). Two manurial treatments were used. Treatments A and C received nightsoil at 25 piculs per dau chung (9 tons giving approximately 100 lb. N, 20 lb. P_2O_5 and 45 lb. K_2O) plus ammonium sulphate at 30 catties per dau chung (240 lb. per acre) per crop; with bone meal on later crops at 1 picul per dau chung (=800 lb. per acre). Treatments B and D received chemical fertilizers at 1.5 piculs per dau chung (96 lb. N, 60 lb. P_2O_5 and 60 lb. K_2O per acre) per crop, with $25\frac{1}{2}$ piculs of compost and 32 catties of lime per dau chung (9 tons and 256 lb. per acre).

93. Six crops were obtained in the year, which is low by commercial practice. On the dry beds, the chemical fertilizer treatment gave a

slight increase over the organic manure but crops on the whole were very similar. A great but irregular variation in yield was obtained in different months; thus the March crop was a failure while its successor in April - May was the highest at about 30 piculs per dau chung. The wet beds gave a succession of failures at first due to poor soil structure and low pH. Owing to these irregular yields it will be necessary to repeat the experiment; but it has shown clearly that high net returns were obtained from a medium crop in September, when the market price was high, whereas returns from all other crops did not cover costs with labour at standard Government rates, even with excellent yields.

Fruit Research

94. The work of this section is divided between the propagation of good quality grafted fruit seedlings for sale to farmers, surveys of commercial orchards, and experimental work into growth and production of fruit and fruit trees. 82% of the grafts made at the nurseries at Tai Lung and Sai Kung were successful, giving a total of 5,087 young trees; these included tangerine, sweet orange, mandarin, grapefruit, pumelo, local lemon, longan, lychee, wampe, sweet peach and Japanese apricot. Six varieties of grapefruit introduced from Sierra Leone in December 1960 grew satisfactorily. They will be used to supply bud-wood in due course. The Leaf Miner (*Phyllocnistis citrella*) continues to be a troublesome pest of young citrus, and is not adequately controlled by present insecticides. Lychee and longan suffered from attacks of the June Beetle (*Anomala cupripes*) but the Lychee Stink Bug (*Tessaratoma papillosa*) was not so serious this year at Castle Peak. Scale-insects and scab and canker are widespread in citrus. A leaf-mottling and reduction in leaf size was very serious at Ko Po and was also observed in Sai Kung; a virus is suspected although mineral deficiency cannot be ruled out, and an investigation is to be carried out at Ko Po.

95. A survey of eighteen commercial fruit nurseries was carried out in the year and it was estimated that a total of 30,000 trees is available from them for sale each year. Difficulties in obtaining skilled propagators and in obtaining suitable sites in urban areas were recorded.

96. *Project No. FR 1: Growth and Intercropping of Fruit Trees on Dry Land Experimental Station, Ta Kwu Ling.* This trial was planted in 1960. Lychee and longan made good growth and benefited from the wind protection provided by the intercropped sugar cane and Cassava. Guava grew well and fruited for the first time in the summer of 1961.

97. An observation plot of Cavendish bananas is adjacent to but not included in Project No. FR 1. 136 suckers were planted in May 1960, and all but eight fruited between September 1961 and March 1962. Five bunches totalling 30 catties were poor quality and unmarketable, and the remainder averaged 15.3 catties per bunch. The price varied from 13¢ to 21¢ a catty, and the gross return was equivalent to \$151 per dau chung.

98. *Project No. FR 2: Growth of Fruit Trees at High Altitude.* The general growth in the orchard at Tai Mo Shan High Altitude Experimental Station improved, although three trees were blown down in the May typhoon and four in the September typhoon. There was also considerable loss of immature fruit—for example, a total of 423 immature fruits weighing $27\frac{3}{4}$ catties was collected under two Chiu Kam mandarin trees. Nevertheless, fruit was harvested from twenty-six trees, although the average was only 1 or 2 catties, apart from two mandarins yielding a total of 31 catties.

99. *Project No. FR 3: Citrus Root Stock Trial.* This trial is in a well protected part of the Tai Po Kau Forest Reserve. Orange, mandarin, tangerine, pumelo and grape-fruit have been grafted on each of the following root stocks: Trifoliolate orange, Cleopatra mandarin, sour tangerine, local lemon and rough lemon. All appeared compatible with the exception of trifoliolate orange stock, which grew faster than the scion in all cases.

100. *Project No. FR 4: Observations on Establishment of Fruit Trees in Forest Land.* This trial was commenced on Sai Kung Livestock Experimental Station by planting fruit trees within an established forest block. The citrus trees were rather old at transplanting but grew well due to the excellent shade and wind protection given by the *Pinus massoniana*, but as expected those growing under Eucalyptus were retarded due to the greater shading and surface root competition.

Plant Protection Research

101. By arrangement with the Director of the Commonwealth Institute of Biological Control, Dr. V. P. RAO, Entomologist in charge of the Indian Station of that Institute, worked in Hong Kong from 13th October to 12th December 1961. During the course of field work for staff training, several new records of insect pests of different crops, notably stem borers, aphides, scales and mealy bugs, and their parasites and predators, were made. Two species of caterpillar, *Dioryctria* near *splendidella*, and a Chinese species *D. yunanella*, were found boring into

shoots of *Pinus massoniana*. Studies of life histories of several pests were carried out and specimens were despatched to the British Museum for determination.

102. Several species of sugar cane borer occur, *Proceris venosatus* Walk being the most important. Four generations were observed between April and October with maximum emergence in April, July and December. The larvae hibernated in the cane from November to March. Field control with insecticide was investigated as follows.

103. *Project No. PP 3*. Four insecticides were compared by spraying at 10-day intervals from 25th April until 23rd October. Yield, number of canes, and number of dead hearts were recorded. The yield from the Endrin treatment was significantly superior (1% point) to all other treatments.

TABLE 4
PROJECT NO. PP 3—CONTROL OF SUGAR CANE BORER
(All figures per acre)

Treatment	Yield in Tons	Nos. of Dead Canes	Cost of Insecticide \$	Gross Income \$	Cost of Insecticide \$	Cost of Labour \$	Net Income \$
Endrin	19.24	10,382	1,864	3,413.41	429.75	348.38	+ 2,636.28
Diazinon	15.35	16,371	2,178	2,678.34	744.15	323.48	+ 1,610.71
B.H.C.	11.02	27,249	1,434	1,988.64	189.12	305.48	+ 1,494.04
Paradichloro- benzene	2.07	40,244	653	357.92	707.85	200.48	- 550.41
Control	2.90	43,245	Nil	422.29	—	153.60	+ 268.69
Significant difference, 5% point ..	± 2.35	± 6,113					
Significant difference, 1% point ..	± 3.20	± 8,338					

104. Pine Caterpillar (*Dendrolimus spectabilis*). This has four generations a year and hibernates in the larval stage from October to February. The summer generations took the following times; egg stage 2 - 10 days, larval stage 14 - 21 days, pupal stage 11 - 22 days. The best control appears to be given by Benzene Hexachloride sprayed in early March, May, late June and September when the caterpillars are most active, feeding on the pine needles. A preliminary investigation showed that Bakethane L 69 (a preparation of *Bacillus Thuringiensis*) gave 98 to 100% control on a small scale. One larval and two pupal parasites were discovered but have not yet been determined.

105. Lychee Stink Bug (*Tessaratoma papillosa* Drur.). Both adults and nymphs feed on the flowers and young fruits of lychee and longan, causing immature fruit to fall (March to July). There is one generation a year. The greenish-white eggs are laid in April, in groups of fourteen.

The egg stage is 4 - 20 (average 10) days, the nymph stage 66 - 74 days and the adult hibernates through the winter. Two hymenopterous egg parasites were discovered and await determination. The eggs were also attacked by a yellow ant.

106. *Rodolia cardinalis*. Twenty specimens of this ladybird, which is parasitic on the cottony cushion scale (*Icerya purchasi*), were received from the Indian Station of the Commonwealth Institute of Biological Control on 4th December 1961. They were bred through four generations up to 1,000 beetles for liberation. The eggs took 5 to 9 days to hatch, the larval stage was 23 - 27 days, the pupal stage 8 - 10 days and the adults laid eggs within 3 days of emergence. The life cycle took 30 days in spring and 49 days in winter. The longevity of the adult was 4 - 7 weeks.

107. *Plant Pathology Studies: Dahlia powdery mildew control*. Using a red flowered variety of Dahlia which is highly susceptible to powdery mildew, six fungicides were compared by spraying three times at 7-day intervals and counting the diseased leaves at the time of spraying. The degree of control is shown by the percentage of diseased leaves as follows:

Karathane WD	...	...	...	...	...	...	11%
Dithane M22	...	...	...	...	...	...	20%
Dithane Z78	...	...	...	...	...	...	21.7%
Cupravit OB21	...	...	...	...	...	...	48.3%
Captan	...	...	...	...	...	...	51.7%
Agri-mycin	...	...	...	...	...	...	60%
Control	...	...	...	...	...	...	100%

108. Bean Rust (*Uromyces phaseolorum de Rary*) is serious on dwarf and runner beans. Rust was also reported on string beans. No adequate control was given by fungicides but observations on five runner beans indicated a range of resistance. Romano (Italian) appeared highly resistant, while Kentucky Wonder and Earliest of All were most susceptible. Tender and True and Morse's Pole were intermediate.

109. Inspections of licence-holders' premises were carried out to ensure compliance with the provisions of the Emergency (Agricultural Poisons) Regulations 1955 under which the sale and use of organo-phosphorus insecticides is prohibited except under permit. This measure was designed to prevent the use of parathion, which, caused many accidents before the control was introduced. Effective liaison with the Medical and Health Department enabled the Insecticide Inspector to investigate all non-suicidal poisoning cases reported, which amounted to twenty-one in the year, and to advise users on safe handling methods.

TABLE 5
INSECTICIDAL POISONING CASES, 1961-62

<i>Course of Poisoning</i>	<i>Organo-phosphorus</i>	<i>Poisoned by Chlorinated Hydrocarbon</i>	<i>Unknown</i>	<i>Total</i>	<i>Remarks</i>
A. Suicidal:					
Fatal	9	2	—	11	
Non fatal	4	5	5	14	
B. Accidental, in house etc.:					
Fatal	2	—	—	2	
Non fatal	5	3	1	9	(One case of ingestion of contaminated vegetable)
C. Careless handling* by operator:					
Hand stirring	1	1	—	2	
Lack of washing	—	1	—	1	
Inadequate clothing	2	4	—	6	
Inhalation	1	—	—	1	
Total	<u>24</u>	<u>16</u>	<u>6</u>	<u>46</u>	

Note: * = None of these cases was fatal.

Chemistry Laboratory

110. Analytical work was mainly done on hill soils. During the year 220 soil samples were collected and analysed, including soils from Ta Kwu Ling Dry Land Experimental Station, six demonstration orchards in Tai Po Tsai, Ha Che, Ngau Au, Pak Ngan Heung, Fung Yuen and Wong Uk Tsuen, five resettlement schemes in Tai Long Wan, Siu Lam, Hang Ha Po, Tai Shui Hang and Tai A Chau, and two private plots of land at the Trappist Monastery and Hong Lok Yuen. The hill soils were chiefly sandy loam and sandy clay loam in texture with organic matter contents ranging from 1.0 - 7.0%. The most acid soil with a pH value of 4.3 was collected from Hang Ha Po and a pH value of 7.0 was found in Tai Long Wan. None of the soils had a cation-exchange-capacity over 13 and most were under 6. Available nutrients, especially phosphorus, were deficient in natural hill soils, whereas in orchard soils the phosphorus content had been built up to satisfactory levels by previous fertilization.

(B) LAND UTILIZATION AND ECONOMICS

Land Utilization Surveys

111. Field observations within main farming areas, during the year, confirmed the following major trends: some conversion of farming land

to urban and industrial use; and within farming, some conversion of first-class paddy land to market garden cropping; and relatively little change has occurred in the less accessible areas in many of which the absence of young men abroad limits production and development.

112. Agricultural land usage in the Colony is recorded in Appendix 2. Points of interest are:

- (a) A total of 33,874 acres of cultivable land, a loss of 67 acres as compared with previous year.
- (b) A further reduction of some 447 acres in the area under paddy.
- (c) An increase in the area under market garden crops, particularly vegetables, by 312 acres.
- (d) An increase in the field crop acreage, by 82 acres.
- (e) An increase in orchards, by 25 acres.
- (f) Some 39 acres of previously abandoned land has been brought back to cultivation.
- (g) An increase in the area under pond fish farming, by 97 acres.
- (h) An increase to tree plantations by 733 acres, to a total area of 14,111 acres.

Economic Surveys

113. Economic surveys undertaken during the year included the following:

- (a) Collecting data of crop production, details of which are given in the appendices.
- (b) Collection of weekly prices of paddy, fruit, cut-flowers, livestock, poultry, feeding stuffs, fertilizers and pond fish.
- (c) Costing studies of 2-crop paddy, Chinese white cabbage, sweet potato, lotus root, pigs and poultry.
- (d) Analysis of vegetable prices supplied by Vegetable Marketing Organization.
- (e) Assessment of crop yields for certificates of origin.
- (f) Analysis of data extracted from the population census schedules; unfortunately lack of staff precluded related sample surveys of agricultural aspects.

Farm Management and Farm Planning

114. Liaison has been maintained with the F.A.O. Regional Farm Management Specialist. Detailed advice has been given where possible and instruction was emphasized in the F.A.O. assisted training course for extension staff.

(C) INLAND FISHERIES

115. Following on the extension of the Au Tau Pond Fish Experimental Station, the ponds were renumbered. Pond A (formerly Pond 1) continued under loan to the Co-operative Development and Fisheries Department. Pond B1 of approximately 4,000 sq. ft. surface area was stocked with 800 Grey Mullet fingerlings weighing a total of 50 catties, together with twelve Chinese Carp, on 1st March 1961. The Grey Mullet were harvested and sold during March 1962 at the high price of \$3.50 per catty. 785 weighed 1,090.5 catties and other fish weighed 80 catties. The total weight of peanut cake used as food during the year was 2,275 catties thus the ratio of feed to fish gain is 2.19 to 1. Total production was at the rate of 1,695 lb. per acre and the return was at the rate of \$5,900 per acre. Pond B2 was used for raising Grey Mullet fingerlings.

116. Work commenced in December on the 5-acre extension to the Station. Sixteen identical ponds No. C1 - C16 are being constructed together with a water storage pond numbered Pond D. All bunds were erected by the end of the year but some work remained to be done on trimming to make the ponds even, and in installing the water supply and discharge system.

117. Advice was given to fish farmers on most aspects of pond fish culture including pond construction, feeding, and control of water quality. For the latter, a total of 2,273 analyses of pH and salinity was carried out on water samples at Au Tau.

(D) CROP COMPENSATION AND CERTIFICATION

118. This work was carried out by the Economics and Land Use section and the Urban Crop Compensation Officer until the establishment of a new section under the latter officer's control on 19th February 1962.

119. The value of crops was assessed in both urban and rural areas on land resumed by Government, and in a few cases where crops had been damaged by Government work or by Government contractors. In the urban areas, crops on fifty-nine cultivation clearance sites covering 55 acres, and in the New Territories, for 828 cultivators on 80 acres, were assessed for compensation.

2. ANIMAL INDUSTRY DIVISION

(A) HUSBANDRY AND RESEARCH

120. Research and investigations were carried out on the Livestock Experimental Stations and Sub-stations at Castle Peak, Sai Kung and Ta Kwu Ling and, in general, livestock remained in good health.

Pigs

121. Herds of Middle White, Berkshire, Large White and Improved Local strains were maintained at departmental stations for selective breeding and experimental purposes, and to provide farmers with improved stock. All pig stock were inoculated against Swine Fever and Foot-and-Mouth Disease; and were regularly tested for evidence of *Brucella suis* infection. No reactors were found to the latter test.

122. During the year 105 sows farrowed 906 piglets. 424 improved breeding stock were sold to farmers who had proven their high standard of good husbandry. Forty four pigs were sold to the Kadoorie Agricultural Aid Association for issue to participants in the Livestock Improvement Plan. The remaining stock were culled, used for experimental purposes, or incorporated into breeding programmes.

123. *Artificial Insemination.* The Artificial Insemination scheme was further expanded and services were in great demand by the farming community. 1,772 sows were artificially inseminated, as compared with 707 during the previous year. From conceptions recorded prior to the 31st March, 1,241 head or 95.09% conceived out of 1,305 inseminated. Of these 79.17% conceived at the first insemination, 14.07% at the second, 2.11% at the third and 0.31% at the fourth. Sixty four sows or 4.9% failed to conceive due to various abnormalities. Semen is available from selected strains of Berkshire, Middle White, Large White and Improved Local Boars.

124. *Cross Breeding.* The cross breeding experimental work was extended to include the crossing of females of the Local/Berkshire, Local/Middle White and Local/Large White breeds back to Berkshire, Middle White, and Large White Boars respectively. The resultant crosses were on the whole slightly inferior to their equivalent first crosses but again the Large White crosses proved to be the most satisfactory, yielding an average litter number of 10.2, an average weight of 104.3 cattiees at 210 days and a killing out percentage of 78.6%.

Poultry

125. The Government maintained a flock of White Leghorns for the production of eggs for laboratory use and hatching purposes at Castle Peak. Flocks of local Cantonese, Wai Chau, White Rock and New Hampshire were kept both at Castle Peak Livestock Experimental Station and Ta Kwu Ling Dry Land Experimental Station for selection and cross breeding trials.

126. *Poultry Observational Trials.* Egg laying trials were carried out using White Leghorns and New Hampshires from Japan, and White Rocks of the Christie and Lawton strains from America, with the following results:

	<i>Average No. of Eggs per Hen</i>
White Leghorn	149
New Hampshire	113
White Rock (Christie strain)	151
White Rock (Lawton strain)	133

Trials comparing the progeny obtained by crossing Improved Local Cantonese and White Rocks showed that it was possible to produce an acceptable table bird of good palatability in a period of twelve weeks. In this trial the most promising cross was that between the Improved Cantonese cock and the White Rock (Christie strain) hen.

127. In similar work carried out at the Kadoorie Farm, Pak Ngau Shek the cross between the Cantonese cock and the New Hampshire hen shows promise.

128. All poultry stock on departmental stations were regularly tested for Salmonellosis and no reactors were found. All stock were inoculated at one day old with Newcastle Disease Nasal Drop 'F' Strain vaccine, at four to five weeks with Mukteswar strain Ranikhet vaccine, at six weeks with Laryngotracheitis vaccine, and at two to three months with Fowl Pox vaccine.

Cattle

129. A total of sixteen working cattle and thirteen buffaloes were maintained on departmental stations. All cattle and buffaloes were inoculated against Rinderpest and Foot-and-Mouth Disease.

Miscellaneous Small Stock

130. The sheep flock maintained at Castle Peak Livestock Experimental Station, for laboratory purposes, increased to twenty six head.

(B) REGULATORY

Animal Quarantine and Abattoirs

131. Officers of the Division were responsible for the inspection at point of entry and the supervision of transport within the Colony of all animals imported for slaughter. During the year inspection staff boarded some 738 vessels importing 367,100 swine and 89,700 cattle to this territory from China, Thailand, South Vietnam, Cambodia, Indonesia, Taiwan, South Korea, Okinawa and Australia. Further inspectorate duties were carried out in respect of all animals arriving overland. In addition 179 dogs, cats and other animals were quarantined and examined upon import.

132. During the year a total of 1,155,210 swine, 103,262 cattle, 11,415 goats and three sheep were admitted to quarantine lairages for subsequent slaughter; of these 333,904 pigs and 4,450 cattle were of local origin. These figures represent a decrease of 108,320 pigs and 26,213 cattle imported compared with imports for the previous year. Admission of local stock for slaughter showed an increase of 40,098 pigs and a decrease of 498 cattle compared with figures for the previous year. Of the local cattle slaughtered for consumption 318 were discarded dairy cows, 752 dairy calves and 3,380 were local brown cattle and buffaloes.

133. *New Territories Abattoirs.* A total of 176,211 pigs and 15,366 cattle were slaughtered in the rural abattoirs during the year. These figures include 3,411 cattle and buffaloes imported from Australia and 2,370 buffaloes imported from Indonesia and slaughtered at the quarantine depot/abattoir at Tai Pak, Lantau Island. Quarantine enforcement and meat inspection were carried out by the departmental staff at Yuen Long, Tai Po and Tai Pak abattoirs.

Dog Licensing and Rabies Control

134. By Ordinance all dogs in the territory are required to be licensed yearly and immunized against Rabies every third year. As a result of enforcement of these controls, the Colony remained free from Rabies for the sixth consecutive year.

135. Eleven inoculation and licensing centres were in operation and, in addition, two mobile units were active in covering the more remote areas in the New Territories. A third mobile unit operated in the urban area, distant from the licensing centres, including the water fronts, re-settlement squatter areas, Causeway Bay, Aberdeen, Shau Kei Wan, Big

Wave Bay, Shek O and other such locations. This mobile service provided increased coverage and ensured that inoculation and licensing facilities were available to the public with the least possible inconvenience. One dog control unit, co-operating with the Police, was fully engaged in the impounding of stray and biter dogs.

136. A total of 15,014 dogs were licensed and inoculated, and 6,676 licensed only, during the year. This represents an increase of 4,976 dogs licensed and inoculated and 762 licensed only as compared with last year. 12,807 stray and unwanted cats were received for destruction and a further 21,127 dead cats were cremated. 1,053 stray dogs were impounded; of these 587 were subsequently destroyed having not been claimed. 2,641 biter dogs were held for observation, of which 1,972 were returned to the owners, three were adopted, 640 were destroyed and thirty died.

Licensing

137. *Dairies.* On 31st March 1962 there were 3,423 dairy cattle in twenty dairies. Towards the end of the year the annual testing of the dairy cattle for tuberculosis was commenced. To date some 1,800 animals have been tested and no reactors found.

138. *Cattle, Swine, Sheep and Goats.* The control of the keeping of animals, especially pigs, in the urban areas of the Colony continued to be a major problem. Surveys carried out in conjunction with the Resettlement Department and the Urban Services Department have confirmed the magnitude of this problem and have revealed that there are some 4,000 pigsties in urban areas. Despite sustained activities and constant visits by the licensing inspectors of the Department, it has been possible to license only 462. 466 pigsties have been demolished during clearance by the Resettlement Department, fifty-two of which have been either re-sited or are awaiting re-siting. In addition two licences to keep cattle and one licence to keep goats have been issued. Attention was also given to fifteen complaints involving forty-four pigsties.

139. *Animal Dealers and Pet Shops.* Eleven licences to carry on the trade of an animal dealer and eleven licences to hawk animals and birds were issued or renewed under the Public Health (Animals and Birds) (Animal Dealers) Regulations, 1960.

140. Regular inspections of these licensed premises were carried out by the licensing inspectors.

Certification of Livestock and Livestock Products

141. *Livestock*. During the year 627 health certificates were issued for livestock yielding a revenue of \$40,594. (See Appendix 17(a)).

142. *Livestock Products*. A considerable quantity of hides, hair, horn, hoof, feathers and other animal products were processed either for local use or export. A considerable amount of this material comes from imported slaughtered stock, but there are also large quantities imported for processing and re-export. The value of these miscellaneous products certified for export, by the Department, was \$15,389,619 (see Appendix 17(b)).

Wild Life Preservation

143. During the year, several amendments were made to the Wild Birds and Wild Mammals Protection Ordinance. Closed season dates were altered and as Deer, except on Hong Kong Island, which is a scheduled area, and Wild Pig are in danger of being exterminated, both these animals were added to the schedule of protected mammals.

144. In December 1961, seventy two Japanese Bamboo Partridges were imported from Japan by Mr. WONG Bor, a Member of the Wild Life Conservation Advisory Committee, and leg banded and released in various selected localities in an attempt to assess these birds under the local environment.

145. Eighty-five new applicants for Game Licences were tested by department staff on the recognition of game, of which seventy two passed on the first test, thirteen failed and five passed on retest. 392 licences were renewed and seventy-seven new licences issued. The three departmental Game Wardens were engaged on patrol duties and with continued Police co-operation the illegal trapping of wild birds was considerably reduced.

3. FORESTRY DIVISION

(A) FOREST ESTATE

146. Although it has been customary to refer to certain areas in the Colony as Forest Reserves there are not in fact any reserves in the sense in which the term is usually employed elsewhere.

147. There are two Prohibited Areas, declared under the Forestry Ordinance, one being Mount Collison and the other a part of the Sha Tin valley. No afforestation has been done in the former and a large area of the latter which was intended as a tung oil plantation had to be

given up during the year for urban development and waterworks installations.

148. Other areas referred to as forest reserves have been mostly the main water catchment areas, in which afforestation has been undertaken, though in two cases they included adjacent areas not actually forming part of the catchment.

149. The exact limit and extent of Crown land used for forestry and under direct Government control is uncertain, and its determination is made very difficult by the existence of undemarcated forestry licence areas, these number several hundred, and in area may be anything up to 600 acres. However, consequent on the revision of the legislation (Summary Offences Ordinance) under which Permits to Occupy Crown Land are granted, the New Territories Administration, assisted by Forestry Division staff, started during the year to check and re-define the village forestry areas.

(B) MANAGEMENT AND SURVEYS

150. Work continued according to an annual programme, concerned mostly with planting. Shortage of trained staff again delayed the preparation of longer-term programmes and forest management plans, but the second Forestry Officer started collecting the requisite information, after his arrival at the end of January. The speed and success of any planning will be largely dependent, however, on an early solution of the land tenure problems referred to above.

151. Existing maps of the areas in which forestry is being done were found inadequate due to their small scale and lack of sufficient detail but a start was made to supplement them with information from air photographs.

(C) COMMUNICATIONS

Roads and Paths

152. A further 1.1 miles of the Shing Mun forest access road was formed but drainage works not completed. The existing part of this road and the Pat Heung access road were maintained. 3.3 miles of new hillside path were constructed on Lantau, and maintenance work was done on a total of 22.5 miles of paths.

Telephones

153. The field telephone system between offices, outposts and fire lookouts, comprising twenty-four handsets and twenty-two miles of wire, was kept in repair and plans were drawn up for the complete renewal of the installation.

(D) FOREST PROTECTION

Against Man

154. Eighty persons were apprehended in connexion with forest offences, compared with seventy-five and thirty-four in the two previous years. Details are given below.

TABLE 6
PROSECUTION FOR FOREST OFFENCES

Class of Land	No. of Cases	No. of Persons	Fine		Imprisoned	Verdict		
			Persons	Amount		Cautioned	Bound Over	Dismissed
Government forestry areas*	24	53	1	\$ 50	—	48	4	—
Other Crown land ..	41	25	4	23	1	18	1	1
Farm forests ..	—	—	—	—	—	—	—	—
	65	78	5	73	1	66	5	1

* Previously referred to as Forest Reserves.

Against Fire

155. The winter was drier than in the previous year and brought double the number of fire calls. February was particularly dry and many fire-crackers used in the Chinese New Year celebrations caused grass fires which spread over large areas, hitherto clothed in attractive vegetation, adjacent to Kowloon.

156. The 261 fires, reported and attended, affected about 4,800 acres in or near plantations. However only 173 acres of young plantations were actually damaged, the remainder being natural vegetation, chiefly grass. The position is summarized below:

(a) Classes of land affected (in acres)

Government forestry areas*	...	...	...	...	1,055
Other Crown land	...	...	...	...	3,454
Farm forests	...	...	...	...	366
Total	...	...	...	...	4,875

* Previously referred to as Forest Reserves.

(b) *Types of vegetation affected (in acres)*

		Hardwoods	Brush & Grass	Conifers	Total
Natural ...	...	—	4,180	81	4,261
Plantations ...	...	62	441	111	641
Total ...	...	62	4,621	192	4,875

157. As in previous years lookout and fire fighting crews were on 24-hour call. The Fire Control Plan was again revised, one of the chief improvements being the adoption of shift-systems for all staff on fire call.

158. Experience during the season emphasized the need for pumps, hose and well distributed water supply as well as improved training. By the end of the year inquiries about suitable equipment were well in hand.

Against Pests

159. The only notable damage was again from the defoliating pine caterpillar (*Dendrolimus spectabilis*). This attacked trees in various localities, including about 150 acres of *Pinus massoniana* in the Tai Lam Chung catchment area. The Tai Lam outbreak was minimized by chemical spraying with Gammexane. Trials with fogging solutions were not very successful because of difficulties with terrain and wind.

(E) SILVICULTURE

Natural Regeneration

160. *Pinus massoniana* regenerates from seed quite readily and examples of wild growth are widespread but without young plantations the need to take advantage of this silviculturally has not yet arisen.

Artificial Regeneration

161. The area of plantations was increased by 733 acres, making an estimated total of 14,111 acres, as follows:

TABLE 7

Class of Land	Area under plantation (acres)		
	At 1.4.61	Added during the year	At 31.3.62
Government forestry areas* ...	10,969	466	11,433
Other Crown land ...	132	44	176
Farm forests ...	2,277	223	2,500
	13,378	733	14,111

* Previously referred to as Forest Reserves.

162. Sites had been prepared during the previous winter and early rains enabled planting to start in April. It was a comparatively good planting season and survival percentages were high. Pit planting with tubed stock was used throughout because, though not the cheapest method, it provides a greater safeguard against losses due to periods of drought. Spacing was 6 ft. $\times$ 6 ft.

163. The replacement of failures and losses due to damage, adverse weather and other natural causes, in areas planted in 1959 and 1960 was estimated as equivalent to about 350 acres of new planting.

164. South China pine (*Pinus massoniana*) continued to be the chief species used because of its pioneering qualities. Brush box (*Tristania conferta*) was used on the better drained soils in less exposed sites, with smaller quantities of *Acacia confusa*, *Casuarina stricta*, *Eucalyptus citriodora*, *E. sideroxylon* and *E. tereticornis*. *Acacia confusa* was used to plant up more of the cleared fire-barriers in an attempt to establish evergreen, fire-resistant cover that will require little maintenance.

165. The use of *Casuarina equisetifolia* for plantations was discontinued as it has been found unsatisfactory in vigour and form, though it continued to be in public demand for windbreaks and amenity planting.

Nurseries

166. The bulk of planting stock for the mainland was raised in the permanent nursery at Tai Lung while that for Lantau was raised at Nam Shan, Pui O. Five smaller field nurseries were also in operation during the year.

167. The practice of pricking out small seedlings from the seed-bed or box into polythene tubes continued but difficulties in obtaining suitable soil, sand and compost for the tubing mixture continue. Larger bare-rooted plants were provided for amenity purposes such as roadside planting. Total nursery production amounted to approximately 1,200,000 plants.

168. Losses of young pine-seedlings through 'damping-off' were rather higher than usual.

(F) PRODUCTION AND TRADE

Production

169. Local production is negligible compared with total requirements of forest produce, for practically all of which the Colony must depend on imports.

170. From Government plantations approximately 40 tons of thinnings were sold, which together with wood from roadside trees realized over \$8,400. 'Christmas trees', 330 in number, were supplied to hospitals, children's homes etc. Nursery sales were just over 8,000 plants, mostly of amenity species, and realized over \$7,800.

171. Accurate details of revenue derived from village plantations and groves are not known but the following figures are based on available information:

				<i>Unit</i>	<i>Quantity</i>	<i>Value (\$)</i>
Camphor Wood	...	...	...	tons	84	26,709
'Christmas trees'	...	...	...	tree	4,140	13,248
Timber and fuel	...	...	...	tons	333	19,703
						59,660
Compensation	...	...	...	tree	4,543	2,781
					Total ...	62,441

172. Revenue from camphorwood sales was directed through District Officers for use on local rural improvements such as the building of paths, piers and schoolrooms.

173. Compensation payments related to pine trees on Crown land held on permit, which was resumed by Government.

174. In addition to these quantities which are known approximately, villagers obtained very considerable but unmeasured quantities of fuel from the branches which they pruned or lopped from pine trees. Some of these they used domestically and some they sold; shrubs and dried grass were similarly cut and used as fuel.

175. The total return (both actual and estimated) from local major forest produce amounted to just over \$81,000, which was the same as in the previous year.

Trade

176. A summary of timber and fuel imports and exports for the calendar year 1961 is given in Appendix 18, based on statistics published by the Department of Commerce and Industry. These show that compared with the previous year the pattern of trade remained substantially the same though at a lower level. The drop in timber imports was accounted for almost entirely in the light hardwood class. North Borneo continued to be the leading supplier of timber and firewood, and Malaya that of charcoal.

177. Divisional staff inspected thirty three consignments of timber for re-export and issued certificates of freedom from live borers.

178. In October the Conservator of Forests, Sarawak, visited the Colony for a week to investigate the demand for, and uses of, Sarawak timbers, and to meet leading importers.

Industries

179. Much of the timber entering the Colony was in the round, and the sawmilling industry, comprising numerous small businesses, was active. Most building work in the Colony is in re-inforced concrete but a large volume of timber is used for form-work. Other industries dependent on timber as a raw material range from those making fancy goods, through such varied items as clogs, high class carved furniture, boat and shipbuilding to plywood manufacture. The first plywood mill started production towards the end of the year.

180. The scope for improving technical standards, particularly in sawmilling and seasoning, was commented on by the Chief of the Division of Wood Technology, Forestry Commission of New South Wales, Australia, during a visit in May.

(G) RESEARCH

181. There are no outstanding developments to report. Routine work was undertaken by supervisory staff.

Botany

182. 138 species were added to the herbarium collection, and eighty nine identifications were completed.

Ecology

183. Further collections and observations were made from the vegetation in selected sites with a view to studying succession under the influence of protection and tree cover.

Silviculture

184. The research staff supervised, and in most cases carried out, seed collection for the Division. Much closer attention was given to seed quality than hitherto. The principal species collected were *Pinus massoniana* (47 lb.), *Tristania conferta* (69 lb.) and *Acacia confusa* (45 lb.) with over 100 lb. of other miscellaneous species. 48 lb. of seed, chiefly *Pinus massoniana*, were despatched to other countries, usually

on an exchange basis. Seeds of twenty-two exotic species, mainly pines and eucalypts, were obtained from overseas for species trials.

185. The species trials, laid out as randomized blocks, are now established on six varying sites. During the year the main work consisted of planting out eucalypt seedlings and applying regulated doses of artificial fertilizer to all trials. Of the pines, *Pinus caribaea*, *P. elliottii* and *P. taeda* promise more vigorous growth than the local *P. massoniana*. Of recently introduced eucalypts *E. grandis* is the most promising.

186. *Casuarina stricta* shows remarkably better growth than *C. equisetifolia* but seed supplies are limited. A particularly vigorous stand of well-formed trees at Castle Peak was thinned with a view to using the remaining trees as a source of good seed.

187. Two local broadleaved species included in a trial planting in 1959, namely *Castanopsis fissa* and *Schima superba* have grown well even on an exposed site and have been noted for inclusion in future large-scale planting.

Soil and Water Conservation

188. The measurement of stream flow from two small catchment areas at Tai Lam Chung continued and computation of the figures collected since 1958 was commenced by the Public Works Department. The measurement from run-off plots was also continued.

189. Several of the more remotely situated automatic rain-gauges connected with the Plover Cove scheme were attended to monthly on behalf of the Water Authority and daily records from the Department's automatic gauge at Tai Lam Chung were supplied to the Royal Observatory.

190. A small scale trial was made of various contour trenching methods to arrest erosion at Tai Lam Chung but the erodibility of the ground with high intensity of rainfall caused all types to silt up within a few weeks.

Mensuration

191. No mensuration investigations were carried out during the year.

Entomology and Pathology

192. For the control of the pine caterpillar (*Dendrolimus spectabilis*) in Tai Lam Chung, the spraying of Gammexane (Dispersable powder) with hand and motorized machines was found effective. Fogging was also tried using various solutions, D-35 DDT being found suitable, but

the rough, hilly terrain and unpredictable air currents make it unlikely that fogging can be used successfully.

Utilization

193. No utilization experiments were made during the year.

(H) AMENITY PLANTING

194. A small amount of roadside tree planting was done in the New Territories and existing trees were cared for. 19,294 trees were supplied to other Government Departments, schools and charitable institutions for planting in Government grounds, parks, schools compounds, and road verges.

195. 257 applications were received for permission, and in some cases assistance, to fell or trim trees, mostly in Hong Kong island or Kowloon. 179 permits were issued to applicants to do the work, in fifty-nine cases work was carried out departmentally, and nineteen applications were referred to the Gardens Division, Urban Services Department.

196. The small ornamental park at Tai Po Kau, overlooking Tolo Harbour, continued to be a very popular attraction, especially at week-ends when visitors often numbered over 500 a day.

4. EXTENSION AND EDUCATION SERVICES

(A) EXTENSION

Supply of Planting Material

197. *Rice.* Improved seed from experimental stations was distributed in accordance with a programme aimed at building up reputable, high-yielding strains in rice-growing districts. 7,688 catties of seed of first-crop varieties, including Fa Yiu Tsai, Kam Bau Ngan, Tso Sze Miu and Castle Peak No. 2, and 3,030 catties of seed of second-crop varieties, including Lo Shu Ngar, Wong Huk Chai Mei, Pak Huk Chai Mei, Kuk Tsai, Tai Lor and Wong Chium, were distributed. This represented planting-out areas of 1,098 dau chung in the first crop, and 432 dau chung in the second crop. Farmers purchased seed through extension staff and, in certain cases, were assisted further by loans from the Kadoorie Agricultural Aid Loan Fund.

198. *Vegetables.* With a view to improving and increasing the amount of planting material available to the farming public, selections

of proven stock were multiplied for distribution. 279.4 catties of vegetable seeds, principally selections of local varieties, were distributed.

199. *Tree Seedlings.* 15,222 forest trees were issued for planting to villages, schools, philanthropic organizations and private individuals as windbreaks, amenities and educational material. 4,819 fruit trees of different types were distributed.

Distribution of Fertilizer

200. A standard paddy fertilizer formula (11.67% nitrogen; 8.8% P_2O_5 ; 4% K_2O) has been evolved from accumulated experimental data. During the two crop seasons 231,060 catties of this balanced fertilizer were distributed to selected farmers and an average of 40 catties per dau chung was applied to 5,776.5 dau chung of paddy. This cost \$9.60 per dau chung and purchasers were further assisted by loans from the Kadoorie Agricultural Aid Loan Fund. Under average local conditions, an increase of between $\frac{1}{2}$ and 1 picul of paddy per dau chung was secured, i.e. \$18 to \$36 per dau chung. Farmers were thus assured of economic returns from their rice crops, apart from residual benefits from fertilizer application.

Demonstrations

201. (a) *Paddy Production Demonstration.* For the two-crop seasons, twenty-four demonstration plots were laid down in ten rice-growing districts. The variety Fa Yiu Tsai was used for the first crop, and Pak Huk Chai Mei and Lo Shu Ngar for the second crop. In all cases, selected seed was used together with the recommended fertilizer dressing. There was little interference with demonstrations and satisfactory results were obtained. The increased yields demonstrated attracted the attention of farmers.

202. (b) *Vegetable Production Demonstration.* As a result of improved accessibility in Sai Kung area there was a marked increase in development of market gardening. In view of the comparative inexperience of potential market gardeners within the area, a demonstration was laid down on tomatoes, comparing the use of artificial fertilizers, correctly applied with the traditional method. This demonstration which was carried out at Sha Kok Mei showed a yield advantage of 16% over the traditional method.

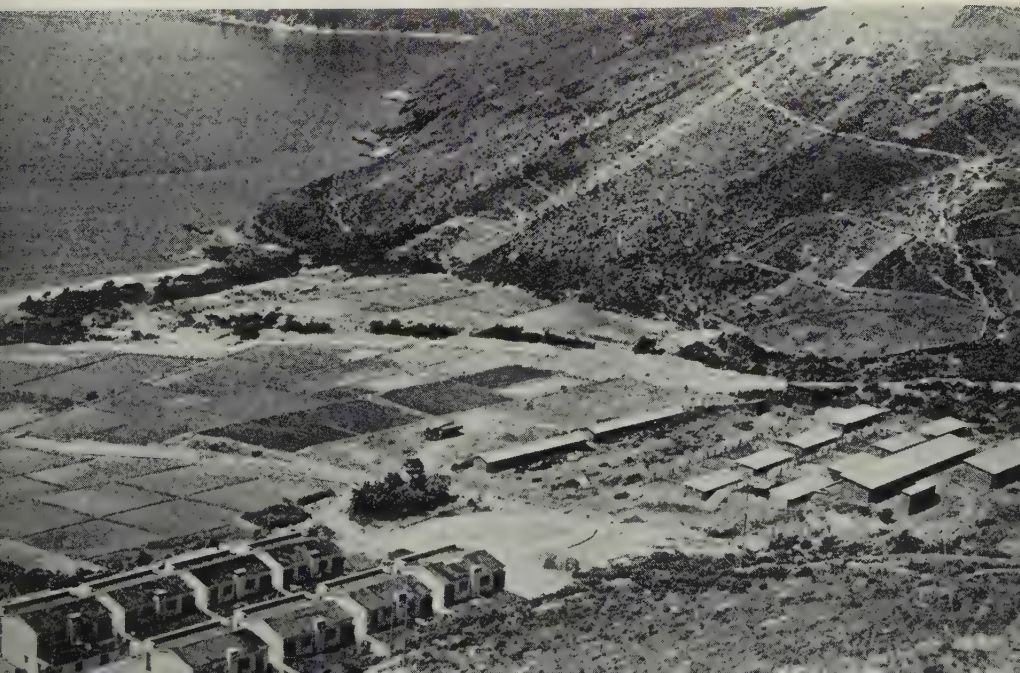
Irrigation Facilities

203. Advice and recommendations have been given on the irrigation projects in the districts of the New Territories.



During dry periods the Departmental Pumping Service assists farmers in obtaining water for paddy, vegetables and fish ponds.

Tai Long Wan Village—planned resettlement of farmers displaced by the Shek Pik Water Scheme.





All imported slaughtered stock are inspected on arrival.

An officer of the extension service gives advice in the field.



204. During dry periods the mobile pump team assisted farmers in obtaining water for paddy, vegetables and fish ponds. As in previous years demands were greater than facilities available and farmers were encouraged to invest in their own pumps. 46 dau chung of paddy nurseries and land were irrigated in April and May; 49 dau chung of vegetable land were irrigated between October 1961 and March 1962; and water was supplied to 333 dau chung of fish ponds. A total of forty-five applications for assistance were received from villages of Kam Tin, Yuen Long, Castle Peak, Tung Chung and Tsuen Wan, and pumps were in operation for a period of 3,367 hours.

Plant Protection Facilities

205. The mobile spraying team gave assistance to 430 farmers, and visited villages in the New Territories to give instruction and assistance. A total area of 202.5 dau chung, including 179.5 dau chung of paddy, 23 dau chung of vegetables, and 10,594 fruit trees were sprayed. The normal procedure is for the farmer to provide the insecticide and for the mobile team to undertake the spraying.

Livestock Improvement and Supply of Breeding Stock

206. *Livestock Census.* A census of the livestock population of the Colony during the last quarter of 1961 revealed the data given with the previous year's figures in Appendix 4. There was an increase in all classes of livestock with the exception of brown cattle and buffaloes, the numbers of which, partly due to the smaller acreage under plough, decreased by some 3,000 head.

207. *Livestock Improvement Plan.* This plan under which needy widows were given pigsties and improved pig breeding stock by the Kadoorie Agricultural Aid Association, and were supplied with concentrated advice and guidance by officers of the Department continued. Fifteen new units were added and at the end of the year there were 477 units in 104 villages establishing widow farmers as pig-raisers. Credit facilities for the purchase of feed by farmers participating in this scheme were provided from the Kadoorie Agricultural Aid Loan Fund. In association with these pig units, two new boar centres were established to make the total at the end of the year twenty-two, suitably distributed throughout the territory. 1,577 sows were served from these centres during the year. Both weaners and porkers produced under this Plan were in great demand on local markets. 1,366 weaners were sold to the Kadoorie Agricultural Aid Association for the stocking of new units and distribution to other assisted farmers. The improvement in the

standard of husbandry has been maintained with the advice and guidance of a small team of officers of the Department. This is shown by the fact that of 15,770 piglets born the mortality was only 4.3%.

Livestock Disease Control

208. During the year staff attended 15,988 cases and outbreaks of disease involving 88,882 farm animals and 356,273 poultry. Preventive inoculation of livestock was also undertaken by mobile teams within this service and comparative data of vaccine used during the recent four years is tabulated herewith:

TABLE 8
NUMBERS OF INOCULATIONS CARRIED OUT

	1958-59	1959-60	1960-61	1961-62
Rinderpest	11,073	11,627	11,066	8,233
Swine Fever	20,180	36,180	54,120	56,640
Newcastle Disease (Mukteswar strain)	4,351,000	8,206,000	11,306,500	13,725,000
Newcastle Disease (F. strain) ...	1,622,080	2,423,700	2,872,000	2,425,400
Black-leg	534	267	159	218
Foot-and-Mouth Disease ...	—	2,127	1,813	5,609
Brucellosis	—	1,650	540	1,400
Anthrax	—	1,650	1,626	1,750
Rabies	12,122	13,660	10,038	15,014
Laryngo-tracheitis	—	—	2,600	5,500

209. *Foot-and-Mouth Disease*. This disease increased in incidence in the New Territories but losses were mainly in suckling pigs, the disease being very mild in other stock. Samples were taken from all reported local outbreaks and sent to Pirbright Laboratory for type classification. Type 'Asia 1' was found in one outbreak on a dairy farm, and all other outbreaks were due to Type 'O'. Vaccines, Type 'A' and 'O' were imported from Holland and used on Government stock, by one dairy farm and six pig-breeders, 5,609 animals were immunized. The incidence of this disease amongst imported cattle held in quarantine lairages decreased considerably. During the year a total of 637 suspected cases were found and eleven carcasses were condemned.

210. *Anthrax*. One case of Anthrax was found, in a local cow, but no cases were seen in imported animals in the quarantine lairages.

211. *Rinderpest*. For the twelfth consecutive year no cases were reported. During the year 8,233 animals were immunized by departmental staff representing a decrease of 2,833 animals compared to the previous year due, mainly, to a decrease of 2,730 cattle in the New Territories.

212. *Ephemeral Fever*. No outbreak of this disease was reported.
213. *Black-leg*. One case of Black-leg in cattle was reported from the Pui O area of Lantau, and 216 animals in this area were inoculated against the disease.
214. *Swine Fever*. 297 outbreaks affecting 2,437 pigs were investigated. Although there were only sixty eight deaths, loss of condition and unthriftiness of surviving animals caused serious economic loss to the farmers concerned. All outbreaks were in uninoculated animals. Preventive inoculations against this disease increased, by 2,520, to a total of 56,640.
215. *Swine Erysipelas*. There was an increase in the incidence of this disease, and twenty-seven outbreaks affecting 203 pigs were reported. All cases treated responded well, but nineteen deaths occurred before advice was sought.
216. *Virus Pneumonia of Pigs*. There was a slight increase in the incidence of this disease and 807 outbreaks involving 2,389 pigs were recorded. Pig-keepers are realizing the importance of higher standards of animal husbandry in reducing the economic loss from this disease.
217. *White Scour of Piglets*. 4,395 outbreaks involving 53,816 suckling pigs were reported and investigated. Where early treatment was adopted losses were slight.
218. *Gastro-Enteritis of Pigs*. This continued to be the most common complaint in adult pig stock. Following advice, regarding feeding and treatment, only thirty-three deaths were recorded in 3,030 outbreaks involving 16,564 pigs.
219. *Paralysis of Sows*. 207 cases in lactating sows were treated with subcutaneous injections of calcium borogluconate and the feeding of a mineral supplement. Only sixteen failed to respond to treatment.
220. *Newcastle Disease of Poultry*. In spite of the greatly increased use of vaccines, 189 outbreaks involving 85,761 birds were reported. All outbreaks were in unprotected flocks and there was a high mortality. The Department imported 2,425,400 doses of Weybridge 'F' strain Nasal Drop Newcastle Disease vaccine from Thailand and 13,725,000 doses of Mukteswar strain Ranikhet vaccine from Malaya. 329,500 birds were inoculated with Mukteswar strain vaccine by departmental staff, and the remaining supplies were sold to farmers for administration by themselves. These importations constitute an increase of 2,418,500 doses

of the Mukteswar strain vaccine and a decrease of 446,600 doses of 'F' strain vaccine compared with 1960-61.

221. *Pasteurellosis of Birds*. Although only 231 outbreaks were reported, the mortality was high, being 60% of the 25,288 birds affected.

222. *Coryza of Fowls*. This disease was again widespread; and was especially severe on those farms where intensive systems of rearing and fattening were practised in conjunction with low standards of management. 695 outbreaks involving 51,550 birds were investigated.

223. *Fowl Pox*. Ninety-five outbreaks involving 5,328 birds were recorded.

224. *Coccidiosis*. The use of coccidiostats is being increasingly adopted by larger producers, but diagnosis was requested in 429 outbreaks involving 27,147 chicks.

225. *Laryngo-Tracheitis*. 360 outbreaks involving 71,596 birds were investigated, in which there was an estimated mortality of 23%. Vaccine imported from America continued to be widely used.

226. *Veterinary Diagnostic Laboratory*. There was a slight decrease in the number of specimens examined during the year, the total being 2,160, which were taken from 203 poultry, 194 pigs, twenty two cattle, six dogs, one quail, five sheep, nine ducks, three fish, one elephant and three geese. 1,387 microscopic examinations, 2,658 cultural examinations, 159 agglutination tests and 5,713 biochemical reactions were completed. In addition the Colony's supply of Rinderpest vaccine, amounting to some 15,000 doses was produced. A regular supply of laboratory animals was maintained principally for departmental use but also for use by the Institute of Pathology, various hospitals and schools.

Farm Forestry

227. 223 acres were planted in twenty one different localities including Hay Ling Chau, Sunshine Island and seventeen forestry licence areas in the New Territories. The greater part of this acreage was in the Sai Kung and Castle Peak areas where forestry licence holders have shown interest in caring for their plantations.

228. Many licensees took advantage of the demand for fresh young pine trees to use as 'Christmas trees', which seem to be gaining in popularity, and also of the heavy demand for firewood at Chinese New Year by felling and marketing thinnings. These were marked for them by officers of the Forestry Division to safeguard the future condition of the plantations.

229. In one plantation a small regular labour force was employed and it was found possible to recover the cost from the sale of thinnings even though the place is accessible only by water.

230. Advice and assistance with the planting of shelterbelts for orchards and farmland was given in six localities.

Community Development Projects

231. Advice and assistance have been given to a number of community projects sponsored by welfare agencies, and for land development at the new village of Tai Long Wan, Shek Pik.

232. As part of the Extension Training Course a village survey was made of Fung Yuen village in Tai Po district and discussions with villagers on possible improvement and development have ensued.

(B) RURAL EDUCATION

Vocational Training Schemes

233. *Vocational Training Courses.* Eight Vocational Training Courses were held for farmers at Lamma Island South (2), Lamma Island North (2), Stanley (1), Yuen Long (1), Tsing Yi (1) and Silver Mine Bay (1).

234. These courses covered pig-keeping, poultry-keeping and vegetable-growing, and lectures were given by the appropriate subject-matter specialists.

235. *Lectures to Co-operative Societies.* Nine lectures on pig-keeping were given to pig raising co-operative society members in the Tai Po, Ta Kwu Ling, Sha Tau Kok and Yuen Long areas.

Farm Broadcasting

236. The 'Farmers' Week' programme which had been regularly broadcast in Cantonese and summarized in Hakka dialect for the previous four years was terminated in October 1961 and replaced by four five-minute broadcasts on farmers reminders and current market prices of agricultural products and livestock.

237. A list of topics discussed in the 'Farmers' Week' programme from April to October is given in Appendix 19(a).

Film Shows for Farmers

238. 5,960 people including 1,150 members of Stanley Kaifong Welfare Advancement Association and the Yuen Long Agricultural Mutual Assistance Society were shown films on agricultural topics in

various centres throughout the Colony by the departmental Projection Team.

239. A list of the departmental films from which showings were made is given in Appendix 19(b).

Publicity and Publications

240. Stocks of simple leaflets on agricultural, animal health and forestry subjects were maintained, as listed at Appendix 19(c). Some 9,000 were issued. Demands were heaviest for those on Animal Health and the Use of Insecticides.

241. A poster on the Prevention of Swine Fever by inoculation was prepared and widely distributed.

Visits by Farmers to Agricultural Stations and Departmental Projects

242. *Farmer Visits.* Six parties of twenty selected farmers from Sai Kung, Tsuen Wan, West Lantau Island, East Lantau Island, Tai Po and Yuen Long visited Castle Peak Livestock Experimental Station, Sheung Shui Market Garden Experimental Station, Tai Lung Forestry and Crop Experimental Station and Ta Kwu Ling Dry Land Experimental Station. In addition these farmers also visited some progressive pig and vegetable farms.

243. *Student Visits.* 273 students and teachers from various schools in the Colony visited departmental stations for educational purposes.

Agricultural Show

244. From comments on the 1961 Colony Agricultural Show it was apparent that there was some drift away from the farmer, and to encourage greater local, and particularly farmer participation, it was decided to hold a smaller, District Agricultural Show during this year. This was held at Pak Kong, Sai Kung, on the 12th and 13th January 1962, and visited by His Excellency the Governor on the first afternoon. There were 115 classes of exhibits and approximately 4,000 entries. Some 20,000 people, mainly farmers and country folk, visited the show. The standard of exhibits was in general remarkably good, as was the interest shown in the exhibits of Government Departments and others that participated. The fact that small farmers, some from outlying areas, won prizes, caused delight. The villagers considered the show as their own, and good local participation was achieved.

(C) FINANCIAL ASSISTANCE TO FARMERS

Kadoorie Agricultural Aid Loan Fund

245. This Fund, with a capital of \$250,000 contributed by Messrs. Horace and Lawrence KADOORIE, and \$1,500,000 by Government, continued to be operated by the Department. The Fund was controlled by a committee with the Director as Chairman and Trustee and Messrs. Horace KADOORIE, Lawrence KADOORIE, T. S. WOO, D. M. CORBETT, and until the 13th March 1962, when he was replaced by Mr. J. M. RIDDELL-SWAN, Mr. E. H. NICHOLS, as members, and Mr. L. S. SMITH as Secretary.

246. With the formation of a unified Extension Service investigation of applications for loans was undertaken by Extension Officers, and staff of the Credit Service undertook disbursement and recovery.

247. The Committee met on twenty four occasions and considered 2,412 applications for loans. 2,165 applications covering 4,137 loan projects, totalling \$859,460.20, were approved during the year. Interest was charged in five cases.

248. The purposes of the loans included purchase of livestock and feed, the construction of livestock housing, fertilizers, insecticides, seed and planting material, and land development, and some construction of fish ponds.

249. Efforts to improve loan discipline and repayment continued and the total of \$966,431.67 was repaid. In order to assist the Credit staff arrangements were made for legal proceedings through the District Courts. Some 2,300 cases involving some \$533,000 were referred for legal action, and of these 1,174 loans were cleared and \$278,087.40 was repaid. This action has led to a better response to the collection efforts of the Credit staff, and has not deterred the genuine farmer from applying for new loans.

250. The Livestock Improvement Scheme involving assistance to widows for pig production in the New Territories continued till the end of December when participants ceased to receive pigfeed in kind and were considered for normal loans. A revised scheme was introduced and new entrants were given cash loans with which to purchase pigfeed instead of pigfeed in kind. Fifteen widows were included in the new scheme. The total number of widows assisted under the old scheme was 502. The amount of loans made during the period 1st April, 1961 to 31st December, 1961 was \$1,059,783.85. The outstanding balance of

loans under the old scheme as at 31st March, 1962 stood at \$115,625.20 and under the revised scheme \$11,246.40.

251. A copy of the Statement of Accounts for the Fund is given in Appendix 19(d).

Kadoorie Agricultural Aid Association

252. Under the mantle of the Kadoorie Agricultural Aid Association, through which Messrs. Horace and Lawrence KADOORIE give considerable assistance to needy individuals and groups in the farming community, the Department serviced individual projects and requests and provided technical assistance and advice.

253. Assistance given included some 672 tons of cement for the construction and repair of paths, channels and bridges, sumps, drying floors, retaining walls, and pigsties, seven working cattle, 795 poultry, 6,440 pigs, sixty three sets of pigsties and twenty-nine poultry sheds. It also included the rebuilding of some farm housing, seed, fertilizer, money and other gifts to those affected by fire and other disasters.

PART IV

DEPARTMENTAL ADMINISTRATION

ORGANIZATION

254. Research, extension, education, regulatory and administrative services are provided, through three major and three minor divisions. Administration is carried out by the directorate, assisted by secretarial and financial services.

255. During the year a unified Extension Service which included members of the Agricultural, Animal Industry and Forestry Divisions was created, supervised by the Senior Extension Officer and co-ordinated by the Veterinary Officer. Posting of staff on a district/circle basis has allowed better contact with the farming community.

256. The Department has an Agricultural Division, which deals with crops and their associated problems, and pond fisheries development; this Division also deals with compensation and export certification for crops. The Animal Industry Division deals with health, husbandry and breeding work for all types of livestock. The Regulatory Section of this Division deals with such matters as rabies control, quarantine of livestock, inspection of animal products and their certification for export where required, and also with inspection and licensing of dairies and

the keeping of cattle, goats, sheep and swine in the urban areas. The Forestry Division is concerned with Government plantations, mainly in the catchment areas, and general forestry regulatory work; it also assists with amenity planting and private afforestation.

257. There are three minor supplementary services; these include a Credit Section which, in addition to processing applications and grants of loans for agricultural purposes from the Kadoorie Agricultural Aid Loan Fund, also deals with applications for grants provided by the Kadoorie Agricultural Aid Association. The Education and Information Section undertakes the training of both young and adult farmers through vocational courses, and provides farmers' radio programmes and film shows. The Land Utilization and Soil Survey Section provides supplementary services used jointly by both the Agricultural and Forestry Divisions, as well as investigating the economic situation and problems of farming.

258. The Department maintains nine experimental stations; at Tai Lung, near Fanling, for crop and forestry work; at Sheung Shui, for market gardening; at Castle Peak, mainly for livestock, poultry and pigs, the latter including the Boar Centre for Artificial Insemination. There is a station at Ta Kwu Ling, for crops and livestock on dry land; at Tai Mo Shan, for fruit and other crop work on high, hill land; at Sai Kung, for forestry, fruit and other crops, and pigs; at Sha Tin, for work with exotic pigs; at Silver Mine Bay, for the testing and multiplication of seed of vegetable selections, and some livestock; and at Au Tau for pond-fish experiments.

ESTABLISHMENT AND STAFF

259. In addition to one new post of Assistant/Forestry Officer and some increase of clerical staff and labour, the establishment of technical staff was increased by eleven, seven for forestry and four stockmen.

260. Mr. R. R. MASON, Agricultural Officer, was on vacation leave from 16th May, 1961 to 14th December, 1961. During his leave he attended a Pest Control Course and the Grassland Agronomy Course at Hurley. He visited the Malacca Fish Culture Research Station on his way back to the Colony.

261. Mr. W. J. SILVEY, Senior Livestock Supervisor, returned from vacation leave on 9th April, 1961.

262. Mr. D. M. CORBETT, Senior Veterinary Officer, proceeded on vacation leave to New Zealand on 14th October, 1961.

263. Mr. CHO Shau-ling, Executive Officer, Class II (Assistant Secretary) was on vacation leave from 1.8.61 to 31.10.61.

264. Mr. P. A. KENNEDY, Senior Forestry Supervisor, was on vacation leave from 11.9.61 to 8.2.62. He visited forestry institutions in Japan during the period 14th November, 1961—19th November, 1961.

265. Mr. R. J. V. EVEREST, (Senior Forestry Supervisor) proceeded on vacation leave on the 14th January, 1962.

266. Mr. TEOH Hua-cheng, Forestry Supervisor Class I, acted as Senior Forestry Supervisor from 14th January, 1962 to the end of the year.

267. Messrs. P. C. CHAMBERS, Director, J. M. RIDDELL-SWAN, Veterinary Officer and WONG Laan-fuk, Assistant Agricultural Officer, visited Japan to study Extension Techniques during the period 26th September, 1961 to 8th October, 1961.

268. Mr. J. M. RIDDELL-SWAN acted as Senior Veterinary Officer during the absence of Mr. CORBETT on leave from 14.10.61 to the end of the year.

269. Mr. SHEN Dze-chia, Assistant Forestry Officer, returned from Australia on 29th April, 1961.

270. Mr. A. J. L. MITCHELL, Forestry Officer on agreement, was appointed on 18th December, 1961 and assumed duty on 22nd January, 1962.

271. Mr. C. G. ESTRADA, Acting Treasury Accountant (Executive Officer Class I) proceeded on leave on the 6th April, 1961.

272. Mr. LAM Wai-wan, Treasury Examiner, acted as Treasury Accountant from the 6th April until 26th September, 1961 when Mr. C. D. W. MARTIN was appointed. Mr. LAM again acted as Treasury Accountant from 23rd January, 1962 until 12th March, 1962 when Mr. D. J. KEELER was appointed as Treasury Accountant.

STAFF TRAINING

273. A most successful In-service Agricultural Extension Training Course was held during January 1962. This was made possible by the co-operation of Dr. C. W. CHANG, Dr. N. PARTHASARATHY, Dr. H. N. MUKERJEE and Dr. S. ONG of the F.A.O. Regional Office, who assisted both in organizing the course and in lecturing. Lectures by local officers and practical work on a village survey and programme planning were also included. Extension Education for Agricultural and Rural Development, Soil Fertility, Farm Management and Planning, Rice Improvement and Animal Disease Control were the subjects covered.

274. In April Mr. SHEN Dze-chia, Assistant Forestry Officer, returned from Australia after twelve months study of forest research methods, made possible by the award of a fellowship under the Australia International Award Scheme.

275. Mr. LIN Yang-chung, Laboratory Technician, who went to the United Kingdom on 31st March 1960 to attend a course of special instruction in Agricultural Chemistry, has spent periods of attachment at the Rothamstead Experimental Station, the Hannah Dairy Research Institute and the Macaulay Institute for Soil Research. He was still undergoing training at the end of the year.

LABOUR AND EMPLOYMENT PROBLEMS

276. The engagement of labour in the New Territories for Agricultural and Forestry work continued to be difficult owing to the greater attractiveness of wages offered for construction work and the absence of many villagers overseas. There was a steady drain on the permanent labour force as men resigned to go overseas also.

277. Prisoners again made a large contribution to the forest labour force, a daily average of 150 being available from Chi Ma Wan Prison and 100 from Tai Lam Prison. The co-operation of the Prisons Officers in arranging the gangs for the various jobs was much appreciated.

OFFICIAL VISITS AND VISITORS

278. In addition to specialists from the Food and Agriculture Organization, which included Dr. Mary KEISTER, Home Economics Officer, who spent ten days in October, 1961 in Hong Kong, on visits and discussions with the various departments concerned, the Department was visited by a very considerable number of specialists and others from overseas, concerned with forestry and various aspects of agriculture during the year. In most cases these visits included visits to stations and other areas of departmental activity.

CONFERENCES AND COMMITTEES

279. Mr. J. M. RIDDELL-SWAN, Acting Senior Veterinary Officer, attended the F.A.O. Far East Meeting on Animal Production and Health in Bangkok during 6th - 16th December, 1961.

280. Mr. R. R. MASON, Agricultural Officer, attended the conference of Directors and senior officers of overseas departments of agriculture at Wye College from 4th September to 9th September, 1961.

LEGISLATION

281. During the year amendments were made to the following Ordinance and Regulations:

1. Wild Birds and Wild Mammals Protection Ordinance, 1954.
2. Dogs and Cats Regulations (Chapter 167).

282. In addition to the above, charges for official examinations of Timber and Crops for export and Veterinary fees for official examinations were promulgated.

FINANCE

283. Recurrent expenditure during 1961-62 showed an increase of 3.7% over 1960-61 and totalled \$5,328,409.33, comprising Personal Emoluments 74.3% and other charges 25.7%.

284. Animal Industry took the largest share of Other Charges representing 39.5%, Forestry 16.3% and Agriculture 5.7%. The remaining 38.5% included Administration, Maintenance, Transport, Stores and Equipment, and Training and Information Services.

285. Additional recurrent expenditure of \$71,558.87 was met from subventions and other departments' allocation, including printing and stationery \$21,957.10, Contributions to Agricultural Research Institutes \$16,256.00, Recruitment and Training \$15,575.93 and Conferences \$4,654.73.

286. Special expenditure during 1961-62 totalled \$374,047.63, including \$77,943.46 on Construction of Forest Roads, \$36,547.24 on Extension of Au Tau Fish Pond Station and \$14,678.76 on the Pig Breeding Scheme.

287. Revenue collection facilities were provided at eleven stations in the New Territories, three in Kowloon, and two on Hong Kong Island.

288. Total revenue for 1961-62 increased by 7.86% over 1960-61 and amounted to \$816,173.14. The main sources were Agricultural Services 32.1%, Sales of Produce 21.3% and Licences 20.9%. Other revenue of 25.7% included dog inoculation fees, slaughterhouse by-products, inspection fees, and charges for feeding of animals.

P. C. CHAMBERS, C.B.E.,
B.A. (Agric.) (Cantab.);
Dip. Agric. (Cantab.); A.I.C.T.A.,
*Director of Agriculture
and Forestry.*

August, 1962.

PART V

APPENDICES

APPENDIX 1

METEOROLOGICAL DATA 1961-62 (FROM ROYAL OBSERVATORY KOWLOON)

	Temperature			Mean Relative Humidity	Evap- oration	Total Rainfall in m.m.		Total Sunshine hours	
	Mean Max.	Mean	Mean Min.			Actual	Mean	Actual	Mean
	°F	°F	°F	%	m.m.				
April, 1961	76.3	71.6	68.0	82	126.9	172.3	136.2	100.5	113.5
May "	83.1	77.5	73.8	81	159.3	213.9	286.1	181.2	155.5
June "	88.7	83.7	80.2	80	180.5	121.0	388.3	242.7	160.5
July "	88.2	82.9	78.8	83	164.7	492.1	386.0	199.4	210.4
August "	87.4	82.2	78.1	84	139.5	462.0	363.3	164.0	201.1
September "	85.5	80.6	76.6	84	125.1	535.0	264.6	125.4	198.1
October "	83.3	78.4	74.7	69	185.4	31.2	110.2	279.1	216.7
November "	76.6	72.1	68.7	74	129.9	91.5	42.5	181.6	185.6
December "	70.2	65.5	62.1	71	113.8	12.1	26.2	170.2	171.5
January, 1962	63.5	57.4	52.2	56	116.3	7.2	31.9	243.0	145.2
February "	68.4	61.9	57.7	71	105.3	82.5	44.6	174.5	98.1
March "	70.2	64.8	60.3	76	101.7	10.4	72.6	150.5	95.0
Mean ...	78.5	73.2	69.3	76		—	2,152.8	—	1,951.7
Total ...	—	—	—	—		2,231.2	—	2,212.1	—

MEAN FIGURES (1884-1939; 1947-1950)

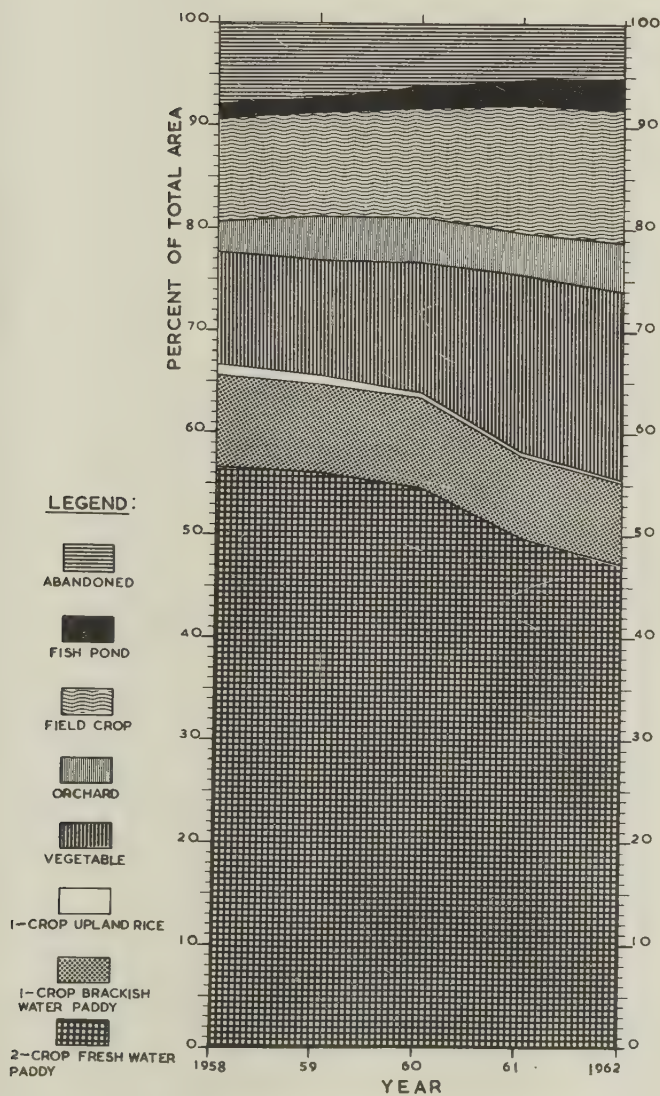
76.7	72.0	68.4	79		2,152.8		1,951.7
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APPENDIX 2

LAND UTILIZATION, 1962 (ACRES)

District	Paddy Land			Vegetable Land	Field Crop Land	Orchard Land	Abandoned Land	Total
	2-Crop Paddy	1-Crop Upland Rice Land	1-Crop Brackish Water Paddy Land					
Castle Peak	1,448	—	20	550	235	165	70	2,488
Ping Shan	771	—	1,190	480	450	130	44	3,065
Yuen Long	1,468	—	80	886	590	108	30	3,162
Kam Tin	2,133	—	104	455	182	54	12	2,940
San Tin...	1,194	—	1,098	400	270	70	85	3,117
Sha Tau Kok	1,000	48	116	90	460	13	229	1,956
Fanling ...	491	—	—	1,130	188	54	16	1,879
Ta Kwu Ling	1,908	63	—	139	363	32	147	2,652
Sheung Shui	1,021	—	70	620	272	55	20	2,058
Tai Po ...	1,471	11	—	720	326	510	300	3,344
Sai Kung North	576	5	—	28	305	15	135	1,064
Sha Tin...	626	—	6	283	180	269	110	1,474
Sai Kung South & Hang Hau	1,027	—	20	190	381	13	240	1,871
Tsuen Wan	218	—	—	280	100	42	190	830
Lantau East	625	—	—	130	180	35	100	1,070
Lantau West	480	—	5	45	98	18	31	677
Po Toi Island & Lamma Island	82	—	—	32	46	2	31	193
Urban Areas	—	—	—	26	3	5	—	34
Total	16,545	127	2,709	6,484	4,629	1,590	1,790	33,874 acres
				Afforested Land		...	...	14,111 acres
				Fish Pond		...	...	989 acres
				Grand Total		...	...	48,974 acres

APPENDIX 3



APPENDIX 4

ESTIMATED LIVESTOCK POPULATION

Item	1960-61	1961-62
Dairy Cattle	3,000	3,210
Brown Cattle	15,000	12,370
Water Buffaloes	2,000	1,760
Pigs	184,000 (including 20,000 breeding stock)	294,350 (including 33,350 breeding stock)
Sheep	15	20
Goats	400	160
Rabbits	450	400
Chickens	3,000,000 (including 300,000 local breeding birds & 20,000 Leghorns)	3,251,000 (including 340,000 local breeding birds & 21,000 Leghorns)
Geese	40,000 (including 6,000 breeding stock)	42,700 (including 7,000 breeding stock)
Ducks	250,000 (including 10,000 breeding stock)	273,500 (including 11,000 breeding stock)
Turkeys	780	800
Quails	15,000	10,500
Pigeons	100,000 pairs (including 40,000 pairs breeding stock)	288,000 (including 48,000 breeding stock)

APPENDIX 5

SUMMARY ON PRIMARY PRODUCTION, VALUE (NEAREST \$1,000)

<i>Item</i>			<i>Value 1959-60 \$</i>	<i>Value 1960-61 \$</i>	<i>Value 1961-62 \$</i>	<i>Remarks 1961-62</i>
Paddy	...	...	18,548,000	16,392,000	19,015,000	1st Crop: \$35 per picul 2nd Crop: \$42 per picul
Vegetable	...	...	36,989,000	43,481,000	52,514,000	Records of Marketing Organization & estimated value of produce consumed locally and sold through other 'laans'.
Fruit	...	...	3,136,000	3,036,000	3,320,000	
Flowers	...	...	—	1,000,900	2,175,000	Improved production & higher prices
Sweet Potato	...	...	6,344,000	9,795,000	10,379,000	Higher prices
Misc. Field Crops	...	...	—	3,668,000	1,971,000	
Rice Straw	...	...	2,371,000	2,551,000	2,989,000	1st Crop: \$5 per picul 2nd Crop: \$7 per picul
Poultry	...	...	38,400,000	56,700,000	50,400,000	Estimated on census figures at \$6 per bird
Eggs	...	...	4,353,000	6,580,000	7,513,000	Hatching eggs & table eggs
Ducks	...	...	7,100,000	8,100,000	10,080,000	Estimated at \$8 per bird
Duck Eggs	...	...	445,000	480,000	700,000	
Pigeons	...	...	826,000	1,400,000	1,680,000	Estimated on census figures at \$7 per pair of squabs
Quail	...	...	9,000	15,000	11,000	Estimated at \$1 per bird
Quail Eggs	...	...	81,000	108,000	79,000	Estimated at 60 c. per dozen
Geese	...	...	910,000	1,080,000	1,320,000	On census figures at \$12 each
Geese Eggs	...	...	146,000	480,000	560,000	
Pigs	...	...	36,303,000	39,340,000	46,012,000	At \$212 per picul and 65 catties average weight
Cattle	...	...	1,558,000	2,375,000	2,254,000	At \$211 per picul and 240 catties average weight
Fresh Milk	...	...	12,450,000	12,596,000	13,619,000	Average \$1 per lb.
Pond Fish	...	...	2,400,000	3,000,000	5,000,000	Increased production
Forest Products	...	...	41,000	97,000	79,000	
Total	...	...	<u>\$172,410,000</u>	<u>\$212,274,000</u>	<u>\$231,670,000</u>	

- Note:* (i) Export crops including vegetables, fruit & vegetable seeds exported under certificate of origin were valued at \$2,389,000.
(ii) Miscellaneous animal products including local products and those for re-export were valued at \$15,390,000.

APPENDIX 6

SUMMARY OF PRIMARY PRODUCTION, QUANTITY

<i>Item</i>					<i>Unit</i>	<i>1960-61</i>	<i>1961-62</i>
Paddy	...	...	...	...	catty	45,327,000	49,410,300
Vegetable	...	...	...	...	catty	170,549,496	199,288,909
Fruit	...	...	...	...	catty	3,314,800	3,984,000
*Flowers	...	...	...	...	dozen	—	828,544
Sweet Potato	...	...	...	...	catty	55,327,500	57,660,000
*Sugar Cane	...	...	...	...	stem	—	9,000,000
*Miscellaneous	...	...	...	...			
Field Crops	...	...	...	...	catty	—	2,088,000
Export Crops	...	...	...	...	catty	5,240,900	3,499,267
Rice Straw	...	...	...	...	catty	4,532,700	49,410,300
Poultry	...	...	...	...	bird	8,100,000	8,400,000
Eggs (including local poultry, Leghorn, geese, duck and quail)					dozen	2,317,980	2,652,000
Ducks	...	...	...	...	bird	900,000	1,260,000
Pigeons	...	...	...	...	pairs	200,000	240,000
Quail	...	...	...	...	bird	15,000	10,500
Geese	...	...	...	...	bird	90,000	110,000
Pigs	...	...	...	...	head	293,806	333,904
Cattle	...	...	...	...	head	4,948	4,450
Fresh Milk	...	...	...	...	pound	12,595,830	13,618,905
Pond Fish...	...	...	...	...	catty	1,200,000	1,850,000

1 catty = 1.33 lb.

* No figures available for 1960-61.

ESTIMATED YIELD, VALUE AND CULTIVATED AREA OF PADDY IN THE COLONY, 1961

District	2-Crop Paddy				1-Crop Paddy (Upland Paddy)			1-Crop Paddy (Brackish Water Paddy)			Total			
	Area in Acres	1st Crop		2nd Crop		Area in Acres	Yield in piculs	Value in \$ @ \$30 per picul	Area in Acres	Yield in piculs	Value in \$ @ \$40 per picul	Production piculs	Value \$	Area in Acres
		Yield in piculs	Value in \$ @ \$35 per picul	Yield in piculs	Value in \$ @ \$42 per picul									
Castle Peak ...	1,466	21,990	769,650	21,110	886,620	—	—	—	20	240	9,600	43,340	1,665,870	1,486
Ping Shan ...	813	10,732	375,620	10,732	450,744	—	—	—	1,257	15,084	603,360	36,548	1,429,724	2,070
Yuen Long ...	1,563	23,445	820,575	22,507	945,294	—	—	—	81	972	38,880	46,924	1,804,749	1,644
Kam Tin ...	2,139	32,085	1,122,975	30,802	1,293,684	—	—	—	122	1,464	58,560	64,351	2,475,219	2,261
San Tin ...	1,205	15,906	556,710	16,629	698,418	—	—	—	1,188	14,256	570,240	46,791	1,825,368	2,393
Sai Tau Kok ...	1,003	13,240	463,400	13,841	581,322	48	432	1,296	125	1,500	60,000	29,013	1,106,018	1,176
Fanling ...	513	7,695	269,325	7,387	310,254	—	—	—	—	—	—	15,082	579,579	513
Ta Kwu Ling...	1,911	22,932	802,620	25,225	1,059,450	63	567	1,701	—	—	—	48,724	1,863,771	1,974
Sheung Shui ...	1,029	15,435	540,225	15,478	650,076	—	—	—	75	900	36,000	31,813	1,226,301	1,104
Tai Po ...	1,481	22,215	777,525	14,818	622,356	11	99	297	—	—	—	37,132	1,400,178	1,492
Sai Kung N....	576	6,912	241,920	7,603	319,326	5	45	135	—	—	—	14,560	561,381	581
Sai Tin ...	633	9,495	332,325	9,115	382,830	—	—	—	10	120	4,800	18,730	719,955	643
Sai Kung S. & Hang Hau ...	1,030	12,360	432,600	13,596	571,032	—	—	—	20	240	9,600	26,196	1,013,232	1,050
Tsuen Wan ...	223	2,944	103,040	3,007	126,294	—	—	—	2	24	960	5,975	230,294	225
East Lantau ...	639	7,668	268,380	7,668	322,056	—	—	—	—	—	—	15,336	590,436	639
West Lantau ...	490	5,780	202,300	5,780	242,760	—	—	—	5	60	2,400	11,620	447,460	495
Lamma Island	82	984	34,440	984	41,328	—	—	—	—	—	—	1,968	75,768	82
Total ...	16,796	231,818	8,113,630	226,282	9,503,844	127	1,143	3,429	2,905	34,860	1,394,400	494,103 or 29,891 Metric Tons	19,015,303	19,828

1 picul = 133 lbs.

APPENDIX 8

QUANTITY AND VALUE OF VEGETABLE PRODUCED IN THE COLONY AND SOLD THROUGH VEGETABLE MARKETING ORGANIZATION 1960-61 vs. 1961-62

	1960-61			1961-62		
	Yield in catties	Value in \$	Average Price \$	Yield in catties	Value in \$	Average Price/ catty \$
Cabbage, Flowering ...	19,146,467	5,689,441.37	0.30	15,563,692	5,330,181.88	0.34
Cabbage, White ...	30,555,835½	5,955,949.03	0.19	27,634,996½	5,692,020.71	0.21
Cabbage, Leaf Mustard ...	11,745,863¾	2,094,361.28	0.18	8,842,739¾	1,923,292.64	0.22
Kale, Chinese ...	9,084,155½	2,625,352.36	0.29	7,817,464¾	2,401,637.47	0.31
Sweet Potato...	2,538,995	440,255.22	0.17	1,934,376½	313,440.93	0.16
Tomato ...	3,024,045¾	709,489.12	0.23	2,848,051½	865,742.94	0.30
Water Cress ...	4,848,602	1,618,114.64	0.33	5,058,379	1,739,528.17	0.34
Onion, Spring ...	3,624,687¼	1,070,274.80	0.30	3,600,408½	1,074,425.05	0.30
Turnip ...	6,931,970¾	1,086,111.10	0.16	4,687,755¾	779,929.27	0.17
Lettuce, Chinese ...	8,139,298½	1,111,041.59	0.14	7,914,063¾	1,348,029.39	0.17
Spinach, Chinese ...	1,603,808¼	288,434.90	0.18	1,570,584¼	430,187.86	0.27
Spinach ...	5,381,172¾	1,137,349.30	0.21	4,615,715¼	1,153,392.61	0.25
Spinach, Water ...	6,945,392½	989,638.48	0.14	7,410,959½	1,208,148.61	0.16
Chinese Chives ...	1,922,098¼	593,734.97	0.31	2,052,470	592,705.04	0.29
Brinjal ...	1,080,612	275,546.80	0.26	1,189,046	336,201.34	0.28
Cucumber ...	3,449,427½	645,794.98	0.19	3,533,182½	529,245.29	0.15
Bean, String ...	5,028,094¾	2,928,486.44	0.58	5,554,961	3,334,733.01	0.60
Yam Bean ...	167,005	47,778.34	0.29	119,885½	46,683.85	0.39
Taro...	485,196¾	174,881.25	0.36	665,506	208,431.15	0.31
Miscellaneous...	24,846,766½	8,996,454.80	0.36	35,007,177½	9,772,670.65	0.28
Total ...	150,549,495¼ or 91,052.33 Metric Tons	38,479,090.77	0.26	147,621,414½ or 89,305.15 Metric Tons	39,080,627.86	0.26

APPENDIX 9

VEGETABLES GROWN IN THE NEW TERRITORIES, AND SOLD THROUGH THE VEGETABLE MARKETING ORGANIZATION, 1960-61 AND 1961-62 (PRODUCTION BY DISTRICT)

	District	1960-61 (piculs)	1961-62 (piculs)
1.	Kowloon	49,465.85½	24,205.51¾
2.	Sha Tin	4,339.95½	5,395.56¼
3.	Tai Po	99,994.36	115,766.38
4.	Fanling	360,364.17	314,625.50¾
5.	Sheung Shui	290,667.61¼	324,258.68
6.	San Tin	90,810.74¾	86,146.72
7.	Yuen Long	125,185.05¾	116,984.96
8.	Kam Tin	203,832.93¼	209,545.51¾
9.	Castle Peak	244,726.74¼	241,525.93¼
10.	Tsuen Wan	36,107.52	37,759.36¾
	Total	1,505,494.95¼	1,476,214.14½

1 picul = 133 lbs.

APPENDIX 10

ESTIMATED FIELD CROP PRODUCTION 1961-62

Item	Quantity	Value \$
Sweet Potato	57,660,000 catties	10,378,800
Sugar Cane	9,000,000 stems	900,000
Millet	90,000 catties	45,000
Peanuts	1,908,000 catties	954,000
Soybean	90,000 catties	72,000
	Total	12,349,800

1 catty = 1.33 lb.

Note: No figures available for 1960-61.

APPENDIX 11

ESTIMATE OF FRUIT PRODUCTION

Name of Fruit Trees	1960-61		1961-62	
	Quantity of Fruits (catties)	Total Value \$	Quantity of Fruits (catties)	Total Value \$
Sweet Orange	82,500	148,500	90,000	153,000
Tangerine... ..	414,000	282,000	450,000	900,000
Foreign Lemon	5,000	2,000	5,000	2,500
Local Lime	510,000	408,000	525,000	420,000
Pumelo	88,000	35,200	100,000	50,000
Mandarin	9,000	27,000	10,000	8,000
Kumquat (Mostly in pots) ...	1,500	1,800	1,500	4,500
Wampie	25,000	127,500	18,000	9,000
Lychee	288,000	432,000	750,000	750,000
Longan	96,000	172,800	100,000	70,000
Papaya	140,000	70,000	160,000	80,000
Guava	300,000	90,000	315,000	94,500
Banana	150,000	37,500	180,000	45,000
Chinese Olive	228,000	228,000	228,000	148,200
Carambola	13,000	3,900	13,000	2,600
Mango	42,500	17,000	42,500	17,000
Yamin	60,000	60,000	60,000	72,000
Plum	16,000	3,200	20,000	14,000
Persimmon	14,000	4,200	14,000	5,600
Sand Pear	4,500	1,125	4,500	1,350
Japanese Apricot	180,000	117,000	200,000	140,000
Peaches (Edible)	350,000	122,500	375,000	206,250
Pineapple... ..	210,000	84,000	300,000	120,000
Miscellaneous	21,000	8,400	22,500	6,750
Total	3,314,800	3,036,425	3,984,000	3,320,250

1 catty = 1.33 lb.

APPENDIX 12

ESTIMATED FLOWER PRODUCTION
1961-62

Name of Flower	Quantity (dozen)	Value \$
African Daisy	21,360	19,224
Asters	16,583	82,915
Carnation	23,763	285,156
Chrysanthemum	140,000	204,139
Calendula	4,325	1,068
Celosia	8,585	10,159
Cockscomb	14,800	4,646
Dahlia	11,815	18,241
Gladiolus	213,000	1,143,800
Ginger Lily	243,577	250,427
Larkspur	4,583	3,539
Marigold	12,437	2,884
Nasturtium	2,837	6,126
Rose, Local Varieties	24,377	12,050
Rose, European Varieties	35,438	58,268
Snapdragon	5,308	7,571
Zinnia	30,000	11,328
Miscellaneous	15,756	15,887
Total:	828,544	2,174,428

Note: No figures available for 1960-61.

CROPS CERTIFIED FOR EXPORT

Crop	1960-61			1961-62		
	Quantity (piculs)	Unit Price	Amount	Quantity (piculs)	Unit Price	Amount
		\$	\$		\$	\$
Vegetable Seeds	708.76	500.00	354,380.00	864.75	471.07	397,357.10
White Cucumber	2,122.60	20.29	43,063.30	1,158.21	10.53	12,201.32
Bitter Cucumber	61.30	100.00	6,130.00	449.59	100.00	44,959.00
Mushroom	1.26	750.00	945.00	—	—	—
Taro	784.42	48.05	37,685.75	111.74	40.00	4,469.60
Ginger	3,353.07	75.47	253,044.87	956.33	59.19	54,825.43
Lotus Root	870.68	62.39	54,319.10	301.30	56.17	16,924.35
Lotus Seeds	12,685.00 (fruits)	.40	5,074.00	—	—	—
Yam	489.18	42.45	20,767.30	—	—	—
White Cabbage	3,654.47	19.41	70,923.90	3,453.01	16.78	57,957.70
Radish	1,217.55	25.12	30,581.35	943.42	19.65	18,542.62
Turnip	3,740.12	34.06	127,385.61	5,108.46	33.49	171,056.25
Mustard	2,015.44	17.06	34,383.01	1,756.41	16.82	29,639.68
Water Chestnut	30,923.08	54.64	1,689,587.70	10,953.80	52.86	579,024.25
Arrowhead	659.87	135.95	89,708.50	440.75	117.96	51,990.00
Lemon	460.96	88.15	40,634.63	208.54	80.00	16,683.20
Wampei...	90.00	50.00	4,500.00	98.95	50.00	4,947.50
Japanese Apricot	448.26	86.61	40,318.92	693.73	69.36	48,120.30
Chinese Olive	69.29	60.00	4,157.40	631.09	64.37	40,625.03
Lychee	—	—	—	6,892.59	1.22	839,386.20
Total	—	—	2,907,590.34	—	—	2,388,709.53

1 picul = 133 lbs.

APPENDIX 14

ANIMALS ADMITTED FOR SLAUGHTER

	1961-62	1960-61	1961-62	1960-61	1961-62	1961-62	1960-61
	Swine		Cattle		Sheep	Goats	
Total	1,155,210	1,223,432	103,262	129,973	3	11,415	13,006

(a) Local Animals

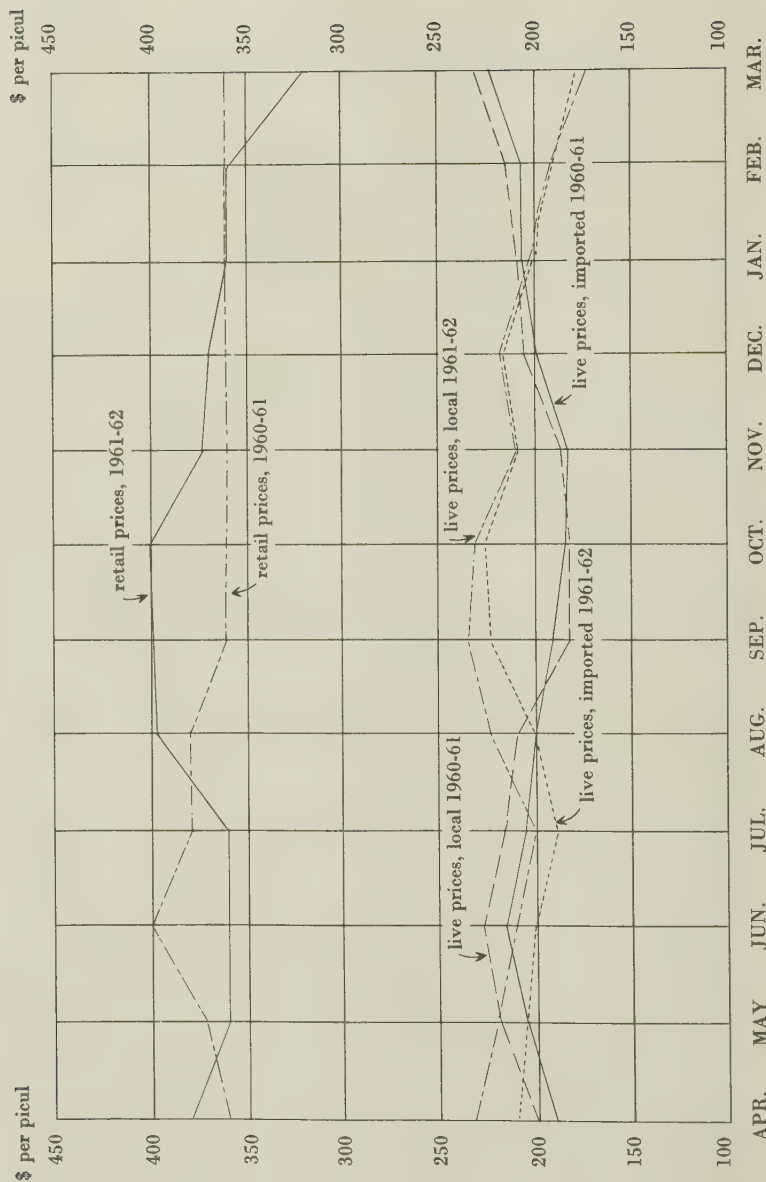
	1961-62	1960-61	1961-62	1960-61	1961-62	1960-61
	Swine		Cattle		Goats	
Urban Abattoirs	174,597	161,447	1,179	1,164	87	212
New Territories Abattoirs ...	159,307	132,359	3,271	3,784	—	—
	333,904	293,806	4,450	4,948	87	212

(b) Imported Animals

Source	1961-62	1960-61	1961-62	1960-61	1961-62	1960-61	1961-62	1960-61
	Swine		Cattle		Sheep		Goats	
China	454,218	613,798	9,099	54,561	3	—	10,061	11,659
Cambodia	119,937	64,805	17,383	12,054	—	—	—	—
Thailand	57,643	33,162	61,427	49,325	—	—	292	542
Taiwan	75,748	75,765	—	—	—	—	—	—
Australia	—	—	3,418	6,094	—	—	—	—
Okinawa	4,943	349	—	—	—	—	—	—
Vietnam	44,980	112,494	476	358	—	—	386	593
Macau	—	70	—	—	—	—	—	—
Indonesia	2,678	—	6,960	2,633	—	—	589	—
South Korea	61,159	29,183	49	—	—	—	—	—
	821,306	929,626	98,812	125,025	3	—	11,328	12,794

APPENDIX 15

LIVE AND RETAIL SWINE PRICES, 1960-61 v.s. 1961-62.



APPENDIX 16

MARKET PRICES OF POND FISH

1961-62

Kind of Fish	Price per picul \$			
	April - June 1961	July - September 1961	October - December 1961	January - March 1962
Grey mullet, under 1 lb. ...	180 - 220	200 - 240	200 - 225	200 - 250
Grey mullet, over 1 lb. ...	280 - 350	300 - 360	320 - 360	300 - 350
Big head	240 - 260	240 - 280	250 - 275	270 - 320
Silver carp	200 - 240	200 - 240	185 - 220	225 - 275
Grass carp and bream...	280 - 320	270 - 320	260 - 320	300 - 450
Mud carp	200 - 260	200 - 260	190 - 250	220 - 300
Common carp and edible gold fish	180 - 220	220 - 260	270 - 350	250 - 415

Note: No figures available for 1960-61.

APPENDIX 17(a)

STATISTICS OF ANIMALS, BIRDS, REPTILES, FISH, BEES, CRUSTACEANS AND STEEL DRUMS INSPECTED AND CERTIFIED FOR THE YEAR OF 1961-62

<i>Animals</i>											<i>No.</i>
Dogs ...	...	...	...	...	...	...	...	...	...	...	105
Cats ...	...	...	...	...	...	...	...	...	...	...	10
Monkeys ...	...	...	...	...	...	...	...	...	...	...	18,626
Gibbons ...	...	...	...	...	...	...	...	...	...	...	10
Elephants ...	...	...	...	...	...	...	...	...	...	...	11
Leopard ...	...	...	...	...	...	...	...	...	...	...	1
Orang-Utans ...	...	...	...	...	...	...	...	...	...	...	31
Squirrels ...	...	...	...	...	...	...	...	...	...	...	3
Dairy Heifers ...	...	...	...	...	...	...	...	...	...	...	4
Panthers ...	...	...	...	...	...	...	...	...	...	...	2
											<u>18,803</u>
<i>Birds</i>											
Cage Birds ...	...	...	...	...	...	...	...	...	...	...	199,539
Pheasants ...	...	...	...	...	...	...	...	...	...	...	15
Pigeons ...	...	...	...	...	...	...	...	...	...	...	313
											<u>199,867</u>
<i>Reptiles</i>											
Pythons ...	...	...	...	...	...	...	...	...	...	...	7
Turtles ...	...	...	...	...	...	...	...	...	...	...	370
Lizards ...	...	...	...	...	...	...	...	...	...	...	2
											<u>379</u>
<i>Goldfish</i>	...	...	...	...	...	...	...	...	...	...	730
<i>Tropical-fish</i>	...	...	...	...	...	...	...	...	...	...	19,245
<i>Bees</i>	...	...	...	...	...	...	...	...	...	...	6 colonies
<i>Crustaceans</i>											
Crabs ...	...	...	...	...	...	...	...	...	...	...	19
<i>Steel Drums</i>	...	...	...	...	...	...	...	...	...	...	17,200

APPENDIX 17(b)

STATISTICS OF ANIMAL PRODUCTS INSPECTED AND CERTIFIED FOR THE YEAR 1961-62

Description of Commodity					Weight in lb.	Average Price/lb. \$	Total Value \$
Bear Bile ...	...	...	...	...	105	950.00	99,750
Bone Meal ...	...	...	...	...	1,162,700	0.15	174,405
Bristles ...	...	...	...	...	8,900	8.00	71,200
Cattle ...	...	...	...	...	2,309,800	1.20	2,771,760
Cattle Horn & Hoof ...	...	...	...	...	1,103,000	0.20	220,600
Civet Cat Hair ...	...	...	...	...	1,620	25.00	40,500
Deer Horn ...	...	...	...	...	2,375	250.00	593,750
Deer Skins ...	...	...	...	...	46,900	2.50	117,250
Dry Sea Food ...	...	...	...	...	1,270	12.00	15,240
Feathers ...	...	...	...	...	532,200	10.00	5,322,000
Frozen Meat ...	...	...	...	...	3,310	2.00	6,620
Gall Stones ...	...	...	...	...	1,427	1,200.00	1,712,400
Goat Hair ...	...	...	...	...	23,010	10.00	230,100
Hide Cuttings ...	...	...	...	...	1,015,500	0.25	253,875
Horse Tail Hair ...	...	...	...	...	21,000	6.00	126,000
Human Hair ...	...	...	...	...	46,000	3.20	147,200
Lard ...	...	...	...	...	2,797	1.00	2,797
Lizard Skins ...	...	...	...	...	820	40.00	32,800
Misc. Animal Hair ...	...	...	...	...	8,800	9.00	79,200
Misc. Animal Hides ...	...	...	...	...	70,460	2.00	140,920
Misc. Animal Horn & Bone ...	...	...	...	...	250,000	0.15	37,500
Musk Pods ...	...	...	...	...	75	7,500.00	562,500
Noodles (Egg Free) ...	...	...	...	...	9,520	0.50	4,760
Pen Wool ...	...	...	...	...	5,200	16.00	83,200
Preserved Meat	Pork Meat ...	...	...	...	600	8.00	4,800
	Pork Sausage ...	...	...	...			
	Duck Meat ...	...	...	...			
	Duck Lower Part ...	...	...	...			
	Duck's Liver Sausage...	...	...	...			
Rabbit Hair ...	...	...	...	...	66,840	25.00	1,671,000
Raccoon Hair ...	...	...	...	...	840	20.00	16,800
Rhinoceros Horn ...	...	...	...	...	545	300.00	163,500
Silk Waste ...	...	...	...	...	125,500	4.00	502,000
Yak Tail Hair ...	...	...	...	...	5,400	6.00	32,400
Miscellaneous	Fresh Water Shell...	...	...	...	27,800	1.00	27,800
	Liquorice ...	...	...	...			
	Human Hair Nets...	...	...	...			
	Wool Waste ...	...	...	...			
Special Preserved Ducks ...	...	...	...	...	51,950	2.40	124,992

Total weight: 6,906,264 lbs.; total value: \$15,389,619 yielding a revenue of \$28,214.50.

APPENDIX 17(c)

RABIES CONTROL STATISTICS

A. DOG INOCULATION AND LICENSING

	Hong Kong	Kowloon	N.T.	Total
Inoculated and licensed ...	2,721	3,012	9,281	15,014
Licensed only ...	1,725	1,194	3,757	6,676
Total ...	4,446	4,206	13,038	21,690

B. OBSERVATION AND STRAY ANIMALS

(ADMISSIONS AND DISPOSALS IN THE FOUR GOVERNMENT KENNELS)

Observation	Dogs	Cats	Monkeys	Pigs
Remaining in Kennels on 31st March, 1961 ...	33	—	—	—
Admitted during the year ...	2,641	86	14	13
Returned to owners ...	1,972	42	13	12
Destroyed ...	640	38	1	—
Died in Kennels ...	30	5	—	1
Adopted by new owners ...	3	—	—	—
Remaining in Kennels on 31st March, 1962 ...	29	1	—	—
Strays				
Remaining in Kennels on 31st March, 1961 ...	7	—	—	—
Admitted during the year ...	1,053	12,807	—	3
Returned to owners ...	454	—	—	3
Destroyed ...	587	12,807	—	—
Died in Kennels ...	5	—	—	—
Adopted by new owners ...	14	—	—	—
Remaining in Kennels on 31st March, 1962 ...	—	—	—	—

C. DOG CONTROL UNIT

	Total Stray Dogs Found	Found Licensed & Returned to Owners	Unlicensed & Returned to Owners after Licensing	Unclaimed & Destroyed
1st Quarter ...	497	346	87	36
2nd " ...	349	177	40	133
3rd " ...	342	105	107	126
4th " ...	349	125	114	114
Total ...	1,537	753	348	436

IMPORTS AND RE-EXPORTS OF TIMBER AND FUEL FOR THE YEAR ENDED 31ST DECEMBER, 1961

Category	Gross Import		Gross Export		Net Import		Percentage by value of gross imports or exports from or to different sources or destinations	
	Hundred of Cu. ft.	Value \$	Hundred of Cu. ft.	Value \$	Hundred of Cu. ft.	Value \$	Imports	Exports
TIMBER								
(A) Round :								
1. Teak ...	1,681.06	2,300,363	162.75	214,470	1,518.31	2,085,893	North Borneo ...	44% U.S.A. ... 32%
2. Primary Hardwood ...	3,609.99	2,185,073	521.29	491,793	3,088.70	1,693,200	Burma ...	17% U.K. ... 25%
3. Secondary Hardwood ...	13,936.29	4,211,713	1,698.91	571,281	12,237.38	3,640,432	Sarawak ...	15% Macau ... 13%
4. Light Hardwood ...	75,363.22	18,428,518	2,657.71	761,112	72,705.51	17,667,406	Thailand ...	10% China ... 8%
5. Soft Wood ...	2,138.48	1,028,398	106.19	41,155	2,032.29	987,243	China ...	4% Japan ... 8%
6. Timber for match-making	734.88	354,571	61.00	32,000	673.88	313,571	Formosa ...	2% Australia ... 3%
7. Poles, Pilings & Posts	855.63	770,215	403.54	398,273	452.09	371,942	U.S.A. ...	2% Netherlands ... 2%
8. Decorative Wood ...	* 36.21	1,004,874	* 2.35	57,798	* 33.86	947,076	Other Sources ...	1% Canada ... 1%
9. Sandal Wood (cwt.) ...	66.16	56,624	1.46	1,168	64.70	55,456	Other Sources ...	7% Other Countries ... 8%
10. Non-conifer logs	...	...	...	...	...	...	...	...
11. Railway Sleepers (no.)	* 45.70	135,806	...	...	...	...	...	...
(B) Sawn :								
12. Teak ...	6,038.35	9,328,042	148.72	757,441	5,889.63	8,570,601	...	...
13. Primary Hardwood ...	86.39	140,576	37.79	53,720	48.60	84,856	...	...
14. Secondary Hardwood ...	7.30	3,200	1,086.46	1,030,453	...	...	...	...
15. Light Hardwood ...	6,895.20	2,329,707	4,614.12	4,312,228	2,281.08	1,762,005	...	...
16. Soft Wood ...	4,211.77	1,778,198	40.92	16,193	4,170.85	273,626	...	...
17. Decorative Wood ...	200.53	372,271	47.55	98,645	152.98	...	...	...
18. Non-conifer lumber	* 27.09	40,546	* 3.5	9,068	...	...	...	...
19. Sandal Wood (cwt.) ...	...	...	...	...	...	...	...	...
Total Timber ...	115,952.54	44,468,495	11,588.41	9,048,798	104,264.13	35,419,697	...	...
FUEL								
(A) Firewood ...	2,014,649	7,427,689	93,389	341,865	1,921,260	7,085,824	North Borneo ...	41% Sarawak ... 5% Macau ...
							Brunei ...	30% N. Vietnam ... 4%
							Malaya ...	13% Other Sources ... 1%
							China ...	6%
(B) Charcoal ...	982,947	11,469,635	60,272	730,845	922,675	10,738,790	Malaya ...	97% Sarawak ... 1%
							N. Vietnam ...	1% Other Sources ... 1%
Total Fuel ...	2,997,596	18,897,324	153,651	1,072,710	2,843,935	17,824,614	...	...

Note : * (i) Figure not included in total. (ii) Above information obtained from Trade Statistics, Imports, Exports, and Re-exports published by Commerce & Industry Dept.

APPENDIX 19(a)

'FARMERS' WEEK' RADIO BROADCAST PROGRAMME — MAIN TOPICS

April, 1961 :

- (a) Vegetable Seed Production.
- (b) The Nightsoil Maturation Plant at Tsuen Wan.
- (c) Poultry Housing and Husbandry.
- (d) Water in Relation to Paddy Cultivation.

May, 1961 :

- (a) Summer Vegetable Crops.
- (b) Agricultural Credit Facilities.
- (c) Pig Housing and Husbandry.
- (d) The Tree Planting Programme, 1961.

June, 1961 :

- (a) Insecticides — Dispensing, Spraying and Handling.
- (b) Some Popular Local Vegetables in the New Territories.
- (c) Kadoorie Agricultural Aid Loan Fund Policy and Projects.
- (d) The Control of Infectious Diseases in Poultry by Preventive Inoculation.
- (e) Kadoorie Agricultural Aid Association and Its Assistance to Farmers.

July, 1961 :

- (a) Vegetable Crop Rotation.
- (b) Transportation of Fish Fry.
- (c) Preventive Inoculation in Pig and Cattle.
- (d) Care of Young Trees during the First Two Years after Planting.

August, 1961 :

- (a) The Training Course for Farmers.
- (b) Preparation for Winter Vegetables.
- (c) Pine Seed Collection.
- (d) Infectious Laryngo — Tracheitis in Chickens.

September, 1961 :

- (a) Exportation of Fish Fry.
- (b) The A. F. D. Extension Service.
- (c) The Brackish Water Paddy.
- (d) Keep Hong Kong Green.

APPENDIX 19(b)

LIST OF FILMS USED IN AUDIO-VISUAL AID

<i>Title</i>					<i>Showing Time (Minutes)</i>	<i>Type</i>
A. <i>Husbandry</i>						
(i)	Paddy Culture in Hong Kong	...	...	...	24	Colour
(ii)	How to Increase Rice Production	...	...	...	14	Colour
(iii)	Use of Insecticides	...	...	...	16	Colour
(iv)	Irrigation and Drainage	...	...	...	20	Colour
B. <i>Livestock Husbandry</i>						
(i)	Poultry Breeds	...	...	...	10	Black and White
(ii)	Examination of Poultry Diseases	...	...	...	10	Colour
(iii)	Exotic Pigs in Hong Kong	...	...	...	20	Colour
(iv)	Meat and Bone Meal	...	...	...	10	Colour
C. <i>Forestry</i>						
(i)	Forestry for the Future	...	...	...	32	Colour
(ii)	Tree Planting Day, 1958	...	...	...	10	Colour
D. <i>Departmental Records</i>						
(i)	Agriculture and Forestry Department Activities				32	Black and White
(ii)	Agricultural Activities:					
(a)	1957	...	...	...	32	Colour
(b)	1958	...	...	...	32	Colour
(iii)	Forestry Activities				32	Colour
(iv)	Veterinary Work				10	Black and White
(v)	H.E. the Governor's visits to the Agriculture and Forestry Department:					
(a)	1955	...	...	...	15	Colour
(b)	1956	...	...	...	24	Colour
(c)	1957	...	...	...	12	Colour
(vi)	Extension Services on Off-shore Islands				16	Colour
(vii)	Au Tau Pond Fish Experimental Station				5	Colour
E. <i>General</i>						
(i)	Hong Kong Agriculture (1956)				32	Colour
(ii)	Flood Damage (1957)				10	Colour
(iii)	Agricultural Show:					
(a)	1955	...	...	...	30	Colour
(b)	1956	...	...	...	32	Colour
(c)	1957	...	...	...	32	Colour
(d)	1958	...	...	...	32	Colour
(e)	1959—1	...	...	...	10	Colour
	2	...	...	...	30	Colour
	3	...	...	...	10	Colour
	4	...	...	...	10	Colour
(f)	1960	...	...	...	20	Colour
(iv)	Dragon Boat Races (1958)				10	Colour

APPENDIX 19(c)

LIST OF PAMPHLETS AND LEAFLETS AGRICULTURE AND FORESTRY DEPARTMENT

I. *Agricultural Pamphlets :*

- (i) Hints on handling Insecticides and Sprayers.
- (ii) Preparation and Sowing of the Paddy Seed Nurseries.
- (iii) Sowing of Vegetable Seeds.
- (iv) Information on Some of the More Effective Insecticides and their Correct Use.
- (v) The Handling of Dangerous Insecticides.
- (vi) How to Transplant Fruit Trees.
- (vii) Control of the Rice Stem Borer.
- (viii) Compost Making.
- (ix) Management of the Paddy Nursery.

II. (A) *Animal Husbandry Pamphlets :*

- (i) Cleaning and Disinfecting Poultry Houses and Equipment.

(B) *Animal Disease Leaflets :*

- (i) Infectious Laryngo-Tracheitis.
- (ii) Rinderpest.
- (iii) Foot and Mouth Disease.
- (iv) Virus Pneumonia of Pigs.
- (v) Intestinal Worms of Pigs.
- (vi) Brucellosis of Swine.
- (vii) Swine Fever.
- (viii) Newcastle Disease of Fowls.

III. (C) *Forestry Pamphlets :*

- (i) Control of the Pine Looper Caterpillar.
- (ii) Tree Seed Collection.

KADOORIE AGRICULTURAL AID LOAN FUND

STATEMENT OF ACCOUNTS FOR THE PERIOD FROM 1ST APRIL, 1961 TO 31ST MARCH, 1962

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE		INCOME	
Bad Debts written off during the year	...	Interest on Fixed Deposit Accounts	...
Balance transferred to Surplus and Deficit Account	...	Interest on Loans	...
			\$ 28,625.00
			52.50
			\$ 28,677.50

SURPLUS AND DEFICIT ACCOUNT

Balance carried down	...	Balance brought down from 1960-61	...
		Balance transferred from Income and Expenditure Account	...
			\$ 25,723.42
			13,635.72
			\$ 39,359.14

BALANCE SHEET AS AT 31ST MARCH, 1962

LIABILITIES		ASSETS	
Trust Fund:		Cash and Bank Balance:	
Donated jointly by Mr. H. KADOORIE, O.B.E., Chev. Leg. Hon. and Mr. L. KADOORIE, Chev. Leg. Hon.	...	The Hongkong & Shanghai Banking Corporation, Kowloon Agency, Current Account	...
Donated by Hong Kong Government	...	Savings Deposit Account	...
Surplus and Deficit Account:		Fixed Deposit Accounts	...
Balance as at 1.4.1961	...	Sundry Debtors (Hong Kong Government)	...
Add Surplus for the year 1961-62	...	Sundry Borrowers:	
Balance as at 31.3.1962	...	Loans Advanced Outstanding 1.4.1961	...
		Add Advances during the year 1961-62	...
		Less Repayments during the year 1961-62	...
		Bad Debts written off	...
		Loans Advanced Outstanding as at 31.3.1962	...
		Borrowers' Individual Interest Outstanding	...
			\$1,789,359.14

In accordance with the provisions of the Kadoorie Agricultural Aid Loan Fund Ordinance, 1955 (No. 25 of 1955) as amended by the Kadoorie Agricultural Aid Loan Fund (Amendment) Ordinance, 1960 (No. 40 of 1960), the cost of Administering the Fund has been defrayed out of the general revenue of the Colony.

CERTIFICATE OF THE DIRECTOR OF AUDIT

The above Statement of Accounts has been examined in accordance with Section 11(2) of the Kadoorie Agricultural Aid Loan Fund 1955 (as amended by Ordinance No. 40/1960). I have obtained all the information and explanations that I have required, and I certify, as a result of this audit, that in my opinion the Statement is correct.

Certified Correct.

P. C. CHAMBERS,
Trustee.

14th May, 1962.

Hong Kong, 27th June, 1962.

W. J. D. COOPER,

Director of Audit.

APPENDIX 19(e)

THE KADOORIE AGRICULTURAL AID LOAN FUND REPORT FOR THE YEAR 1961-62

This report is submitted in accordance with Section 11(3) of the Kadoorie Agricultural Aid Loan Fund Ordinance, 1955 as amended by the Kadoorie Agricultural Aid Loan Fund (Amendment) Ordinance, No. 40 of 1960.

2. The Fund was administered by Mr. P. C. CHAMBERS, C.B.E., as Trustee under Section 3 of the amended ordinance, during the year. Mr. Woo Ting-sang was reappointed as a member of the Committee for a further period of three years from 16th July, 1961. Mr. D. M. CORBETT proceeded on vacation leave on the 14th October, 1961, and Mr. J. M. RIDDELL-SWAN acted as a member of the Committee in his place. Mr. RIDDELL-SWAN was appointed to replace Mr. E. H. NICHOLS as a member of the Committee for a period of three years with effect from 13th March, 1962. Mr. L. S. SMITH continued to serve as Secretary for the full period of this report.

3. It is pleasing to report that there were no major disasters affecting farmers during the year with the result that there was no abnormal increase in the number of applications for loans. The Full Committee met on 24 occasions and considered 2,412 applications for loans. 2,165 applications covering 4,137 loan projects totalling \$859,460.20 were approved during the year. The balance of loans outstanding as at 31st March, 1962 was \$1,044,037.65. Interest on loans was charged in 5 cases as provided in the Kadoorie Agricultural Aid Loan Fund Amendment Ordinance No. 40 of 1960.

4. The reorganization of the Loan Fund Section and revised arrangements for recovery which became effective in August 1960 and was referred to in paragraph 7 of the 1960-61 report resulted in the high increase in repayments of loans being maintained. During the year under review a total sum of \$966,431.67 was repaid bringing the total recovered since August 1960 to \$1,952,559.97.

5. In order to reduce the number of loans and amount overdue arrangements were made for the commencement of legal proceedings through the District Courts. Approximately 2,300 cases involving some \$533,000 were referred for legal action. As a direct result of this action 1,174 loans were cleared and \$278,087.40 was repaid.

6. Every effort has been made to ensure that the revised system for repayment does not cause undue hardship or deter the genuine farmer from applying for new loans. It is encouraging to note that the number of new applicants for loans has increased and many more of the existing borrowers are paying on due date.

7. The Livestock improvement Scheme involving assistance to widows for pig production in the New Territories continued till the end of December when participants ceased to receive pigfeed in kind and were considered for normal loans. A revised scheme was introduced and new entrants were given cash loans with which to purchase pigfeed instead of pigfeed in kind. 15 widows were included in the new scheme. The total number of widows assisted under the old scheme was 502. The amount of loans made during the period 1st April, 1961 to 31st December, 1961 was \$1,059,783.85. The outstanding balance of loans under the old scheme as at 31st March, 1962 stood at \$115,625.20 and under the revised scheme \$11,246.40.

8. A copy of a signed and audited Statement of Accounts for the year including an Income and Expenditure Account and Balance Sheet is at Appendix 19(d). Up to the 31st March, 1962, a total of \$695,000.00 was lodged with the Hongkong and Shanghai Banking Corporation, Kowloon Agency as Fixed Deposits and in a Savings Deposit Account. Interest earned as at 31st March, 1962 amounted to \$28,625.00. 59 bad debts totalling \$15,041.78 were written off. \$52.50 representing interest accruing from loans was also earned.

For and on behalf of

THE KADOORIE AGRICULTURAL AID LOAN FUND COMMITTEE

P. C. CHAMBERS,
Trustee.

9th August, 1962.

APPENDIX 20(a)

LIST OF SENIOR STAFF AT 31st MARCH, 1962

Administration

Director	P. C. CHAMBERS, C.B.E., B.A. (Agric.) (Cantab.), Dip. Agric. (Cantab.), A.I.C.T.A.
Assistant Director	E. H. NICHOLS, B.Sc. (Dunelm), Dip. Agr. (Cantab.), A.I.C.T.A.
Secretary	L. S. SMITH.
Treasury Accountant	D. J. KEELER.
Assistant Secretary	S. L. CHO.

Agriculture Division

Agricultural Officer	R. R. MASON, B.Sc. (Agric.) (Lond), Dip. Agric. (Cantab.), N.D.A.
Agronomist (A.O.)	P. L. SIAK, B.Sc. (Lingnan).
Market Garden Research Officer (A.A.O.)	S. Y. CHAN, B.Sc. (Lingnan).
Fruit Research Officer (A.A.O.)	S. K. LO, B.Sc. (Lingnan).
Pest and Disease Control Officer (A.A.O.)	P. Y. SO, B.Sc. (Lingnan).
Pond Fisheries Officer (A. Fish. O)	Y. S. YU, B.Sc. (Yenching).

Animal Industry Division

Senior Veterinary Officer	D. M. CORBETT, M.R.C.V.S., M.R.S.H.
Veterinary Officer	J. M. RIDDELL-SWAN, B.Sc. (Edin.), M.R.C.V.S., M.R.S.H.
Senior Livestock Research Officer (A.A.O.)	H. F. YUNG, B.Sc. (Lingnan).
Senior Livestock Supervisor (Regulatory)	W. J. SILVEY, Dip., R.S.H.

Forestry Division

Forestry Officer	P. A. DALEY, B.Sc. (Wales).
Forestry Officer (Planning)	A. J. L. MITCHELL, B.Sc. (Aberdeen).
Senior Forestry Research Officer (A. For. O.)	D. C. SHEN, B.Sc. (National Central).
Senior Forestry Supervisor (South)	R. J. V. EVEREST.
Senior Forestry Supervisor	P. A. KENNEDY.

Extension Division

Senior Extension Officer (A.A.O.)	L. F. WONG, B.Sc. (Lingnan).
Senior Livestock Extension Officer (A.A.O.)	Y. T. MACK, B.Sc. (Lingnan).

Credit Service

Senior Credit Officer (A.A.O.)	T. S. WOO, B.Sc. (Lingnan).
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Education and Information Service

Rural Education Officer (A.A.O.)	Y. W. TAAM, B.Sc. (Lingnan).
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Land Utilization and Soil Survey Service

Agricultural Economist (A.O.)	C. T. WONG, B.Sc. (Kwangsi), D.T.A. (Trinidad).
Soils Lab. Technician	Y. C. LIN, B.Sc. (Taiwan).

A.A.O. = Assistant Agricultural Officer.
A. For. O. = Assistant Forestry Officer.
A. Fish. O. = Assistant Fisheries Officer.

APPENDIX 20(b)

VISITORS TO THE DEPARTMENT

His Excellency the Officer Administering the Government, The Honourable C.B. BURGESS, C.M.C., O.B.E., and the Honourable the Colonial Secretary, Mr. E. B. TEESDALE, M.C., paid official visits to the Department during the year. Many members of the diplomatic and commercial communities, and representatives of welfare organizations visited the Department. Overseas visitors included :

P. PEPERZAK, F.A.O., Bangkok, Thailand.

Tohei SAWAMURA, National Institute of Agricultural Sciences, Tokyo, Japan.

J. HUDDLESTON, Division of Wood Technology, Forestry Commission of N.S.W., Australia.

A. QUIRINO, Judge, Republic of Philippines.

Horst von OPPENFELD, U.P. College of Agriculture, Laguna, Republic of Philippines.

G. E. MULGRUE, Regional Information Adviser, F.A.O., Bangkok, Thailand.

F. J. SIMMONDS, Director, Commonwealth Institute of Biological Control, Ottawa, Canada.

R. SPINK, N.T.A. Darwin, Commonwealth Government of Australia.

H. N. MUKERJEE, F.A.O. Soil Fertility Specialist, Bangkok, Thailand.

Shao-er ONG, F.A.O. Regional Farm Management Specialist, Bangkok, Thailand.

K. HEUGH, District Forester, Forbes, New South Wales, Australia.

Ernest A. BALL, University of North Carolina, Raleigh, N.C., U.S.A.

J. J. HAINES, Plant Protection (I.C.I.), United Kingdom.

Dr. Jose VIDIGAL, Government Veterinary Surgeon, Macao.

Manuel Luiz de CASTRO, Regente Agricola das Brigadas M. do P. da Vinha, Macao.

Francisco Jose de Silveira RANUS, Regente Agricola das Brigadas M. do P. da Vinha, Macao.

LEE Jae Hyon, Agricultural Supply Section of M.A.F. in Republic of Korea.

John L. CREECH, Crops Research Division, Plant Industry Station, U.S.D.A., Beltsville, Maryland, U.S.A.

Allan A. MCARDLE, F.A.O. of United Nations and c/o South Australian Department of Agriculture.

W. H. HUMPHREY, Fletcher School of Diplomacy, U.S.A.

David S. BURGESS, U.S. Department of State, Washington, D.C., U.S.A.

Robert S. SMITH, U.S. International Co-operation Administration, Washington, D.C., U.S.A.

Harold WESTLUND, Willows Daily Journal, California, U.S.A.

Edwin Y. CHUN, University of Hawaii, Honolulu, Hawaii.

Leo MIGUAR, U.S. Trust Territory, Caroline Islands.

M. J. A. McMAHON, Department of Forests, Konedobu, Papua.

J. M. FERRER, Venezuelan Consul.

Edgardo MONDOLF, Director, Rural Welfare Council, Venezuela.

Calvin C. SPILSBURY, Fats and Soils Division, Foreign Agricultural Services, U.S.D.A., Washington, D.C., U.S.A.

P. S. YATES, Manager of Yates Seed Co., Sydney, Australia.

L. D. STAMP, University of London, London School of Economics, London.

B. E. SMYTHIES, Kuching, Sarawak.

H. D. JORDAN, West African Rice Research Station, Sierra Leone.

N. PARTHASARATHY, F.A.O., Bangkok, Thailand.

P. F. LEWIS, Veterinary Consultant, Commonwealth Serum Labs., Parkville, Melbourne, Australia.

B. N. RICHARDS, Research Officer (Tree Nutrition), Queensland Forestry Department, Australia.

APPENDIX 20(b)—*Contd.*

- Mary Elizabeth KEISTER, Home Economist, F.A.O., Rome, Italy.
 S. H. WIMBUSH, Forest Officer, Nigeria.
 V. P. RAO, Entomologist in charge, Commonwealth Institute of Biological Control, Bangalore, India.
 F. A. SHAH, Regional Marketing Specialist, F.A.O. Office, Bangkok, Thailand.
 Lawrence LIEW, Extension Service, Agricultural Department, British North Borneo.
 Rev. MUETZELFELDT, Director of Lutheran World Federation, Department of World Service, Geneva, Switzerland.
 M. S. KIM, National Agricultural Co-operative Federation, Seoul, Korea.
 H. RAFTER, British Colombo Plan Forestry Expert, Cambodia.
 Sou SAROUN, Asst. Director of the Department of Water and Forests, Cambodia.
 Chhim PHEUM, Provincial Director at Kampot, Cambodia.
 Nguon VAN, Provincial Director for the Central Region, Cambodia.
 C. M. GOWDA, Trainee under Colombo Plan, Chiba University, Matsudo, Chiba, Japan.
 KOENSOBEKTI, Professor of Malang University, Indonesia.
 G. GLEASON, American Journalist, New York Herald Tribune, U.S.A.
 Mr. and Mrs. Harry C. SMITH, 84 Rosehill Ave., Toronto 7, Canada.
 D. G. M. HUTCHISON, Agricultural Department, British North Borneo.
 C. W. CHANG, Adviser on Agricultural Extension, F.A.O., Bangkok, Thailand.
 Miss Frieda MILLER, Representative of International Labour Organization.
 W. B. R. SMITH, Queensland Aerial Survey Co., Brisbane, Australia.
 John G. PIKE, Queensland Aerial Survey Co., Brisbane, Australia.
 V. S. CARN, Egg Marketing Board of New South Wales, Australia.
 Don SEARLE, 117 No. Glenroy Ave., Los Angeles 49, California.
 John D. JOHNSON and Michigan Farm Delegation as follows :
 William J. CLARKE
 Mrs. Minnie E. CLARKE
 Miss Alleen M. LIPSEY
 Frank MERRIMAN
 Mrs. Myrtle MERRIMAN
 Robert M. MUIR
 Mrs. Margaret C. MUIR
 Harry NYE
 Mrs. Leone NYE
 Harry PETERSON
 Edward J. RISCH
 Mrs. Margaret Y. RISCH
 Herman ZOLLAR
 Simon POLAK, U.N.I.C.E.F., Bangkok, Thailand.
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